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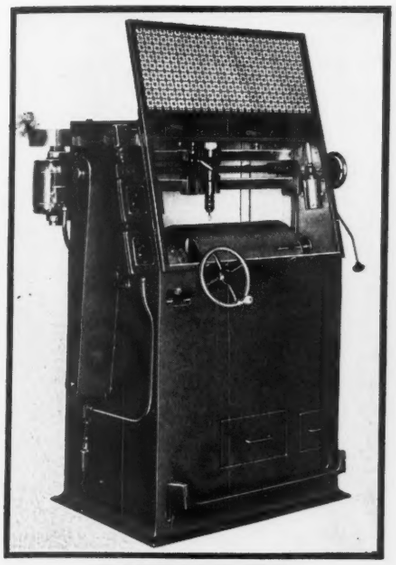

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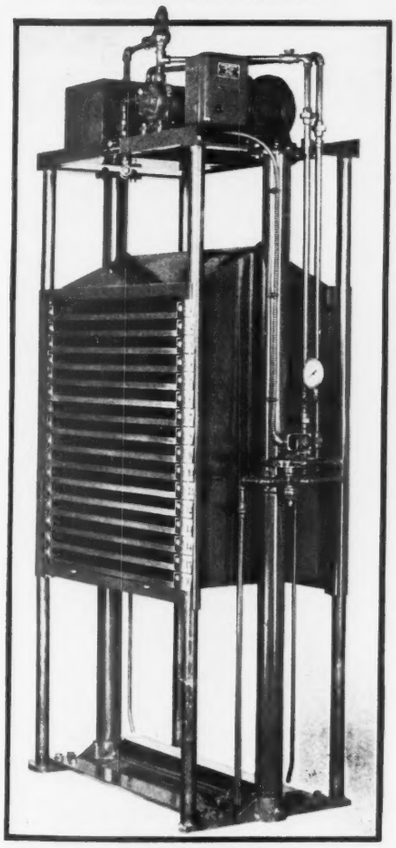

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Cylindrical Engraving

for direct printing on rotary presses devised by Kansas City engraving executives

By J. S. MERTLE, A.R.P.S.*

*Technical Director, International Photo-Engravers' Union of North America.

Abstract of article appearing in the *American Photo-Engraver*.

AS THE title implies, this description refers to a method of etching line and halftone images into relief on semi-cylindrical surfaces, the resulting printing plates are intended for direct use on rotary presses instead of the usual stereotypes or electrotypes.

Our purpose is to outline the procedure involved in cylindrical engraving, as invented and developed by John Henry Lee (photoengraving superintendent) and George Edward Funk (foreman, color plate department), of the Kansas City (Mo.) *Star*.

Fig. 1.—The Lee and Funk printing frame in which a pre-curved sensitized 16-gauge zinc plate is placed for exposure to arc light source or a curved bank of mercury vapor tubes.

The information here presented was gathered during a personal conference with the inventors, coupled with personal observation of result and a demonstration of the production principle employed in the method. Patent application has been made for the process, which is the result of joint activity between Lee and Funk, who made their first effort in June, 1940.

In this effort, flat (plane) sheets of zinc were sensitized with cold enamel, a line-halftone combination negative then photoprinted on the sensitized metal, after which the print was developed. At this stage, the plate was curved into the proper semi-cylindrical form, whereupon it was etched, and the etched (curved) plate then backed with stereotype metal to the thickness required for the press cylinder.

Objecting to the image-distortion and stretching of the plate during the process of bending the flat sheet of metal, the inventors soon after (August, 1940) decided to curve the metal *before sensitization*, thereby eliminating any possible alteration of line and dot and providing a more accurate printing surface. It should be stated that the metal used was 16-gage zinc, regularly employed in photoengraving.

In carrying out the work on the curved plate, the metal surface was cleaned in the normal manner (prior to sensitization), the clean surface then flowed by hand with cold enamel, and the plate whirled dry on an ordinary photo-engravers whirler, the plate face down during the whirling operation.

Given the curved sensitized surface, the ingenuity of the inventors was called into play to provide an apparatus on which the curved plate could be exposed under the film negative used in the method.

Fig. 2.—Side elevation of the curved plate printing frame shown in Fig. 1.

The cylindrical printing frame as devised by Lee and Funk is shown in the accompanying illustrations. As originally constructed, it consisted of a half cylinder of metal carrying a rectangular rubber blanket with a border or elevated beading, and fitted with an exhaust vent in one corner of the blanket. Fig. 1 shows the front of the frame, ready for printing; Fig. 2 shows the side elevation of the frame.

In use, the sensitized plate is fitted over the blanket, the film negative then placed in correct position on the sensitized surface, after which a sheet of heavy transparent celluloid (0.020 in. thick) is placed over the curved blanket. The air between the celluloid and blanket is then exhausted by means of a vacuum pump, causing the flexible celluloid to mold itself against the plate and blanket, thus bringing the negative into direct and uniform contact with the sensitized metal through the atmospheric pressure principle of the regular vacuum printing frame.

Following exposure to arc light (or a curved bank of mercury vapor tubes), the plate is developed by immersing it in a circular container filled with normal cold enamel developer, the curved plate being moved or the solution agitated so as to promote rapid and uniform development of the image. The operation completed, the plate is rinsed with water and then whirled dry.

Etching of the curved plate is carried out either in a special etching machine, or a regular machine fitted with a mandrel; on this, the plate is attached and caused to rotate in the machine, thereby permitting the acid solution to be thrown against the rotating plate by the agitating action of the paddles in the machine.

The routine of etching depends on whether the images are in pure halftone or whether they are line-halftone combinations. Because of the captions under the illustrations or other necessary text matter, line-halftone combinations are the rule, with the plate accordingly given four bites. As might be supposed, the dragon's blood process of etching is employed: the plates may be powdered by hand or the powder applied by means of a controlled blast of air, the plate attached to a supporting cylinder, permitting rotation and convenient brushing of the plate after powdering.

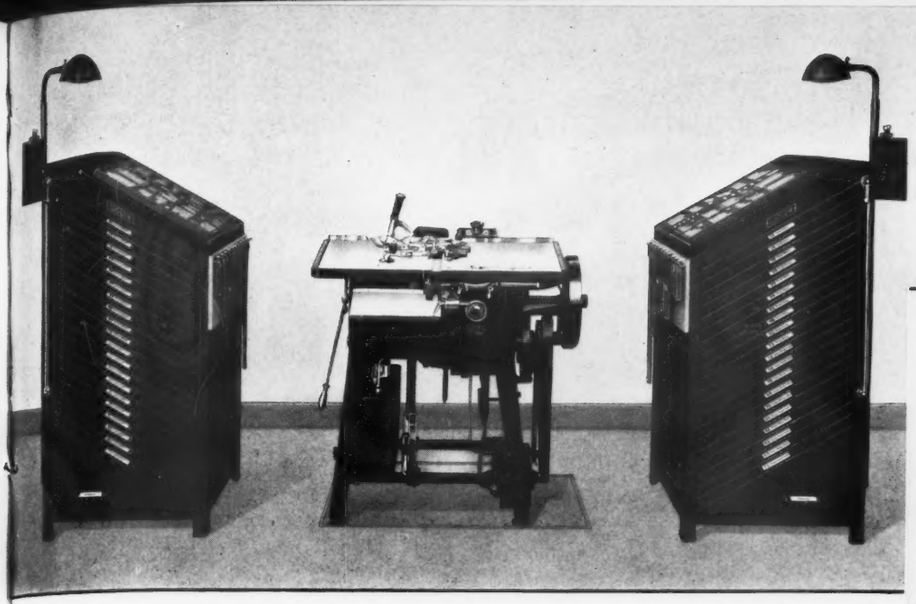
For 65-line halftone images, the average highlight depth is about 0.007 in.; the line areas are etched to the required depth of newspaper line etchings.

On completion of etching, the plate is backed with stereotype metal to the required thickness, the backing shaved smooth, after which line areas in the plate can be given additional depth by routing on a stereotype or curved router. The backed plate is then ready for attachment to the cylinder of the newspress.

Instead of 16-gage zinc, the inventors are considering the use of thick zinc plates, the idea being to dispense with backing of the thinner metal after etching.

A possible further avenue of employment for the cylindrical engraving process is the production of curved (backed) copper etchings, in an effort to dispense with curved electrotypes from the original etchings. The copper plates are bent before sensitizing, which is effected with bichromated glue solution or the enamel of the copper etching process. There is no departure in sensitizing, exposing or developing the plate, aside from the curved surface of the plate, but in burning-in the glue image on the curved metal, the

(*Continued on Page 102*)



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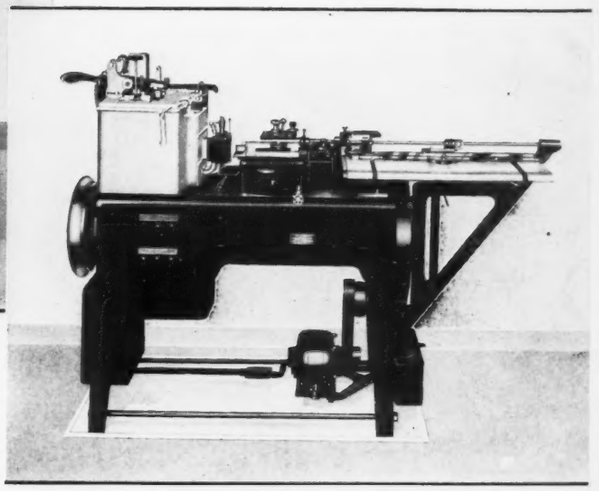

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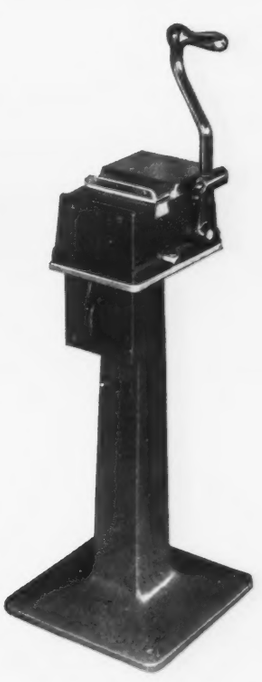

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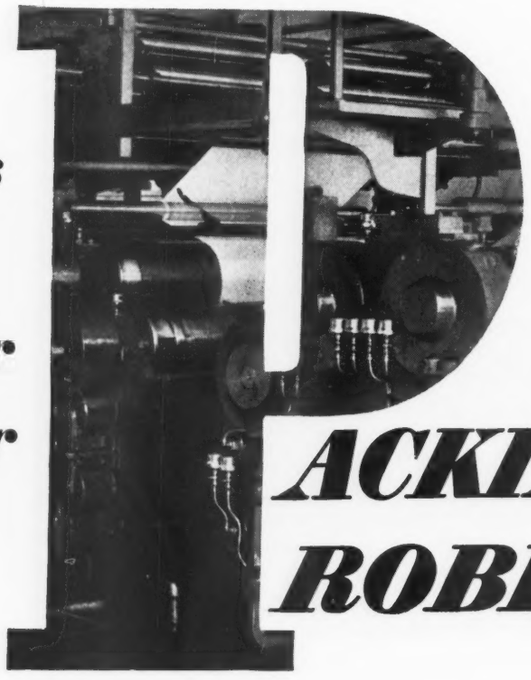

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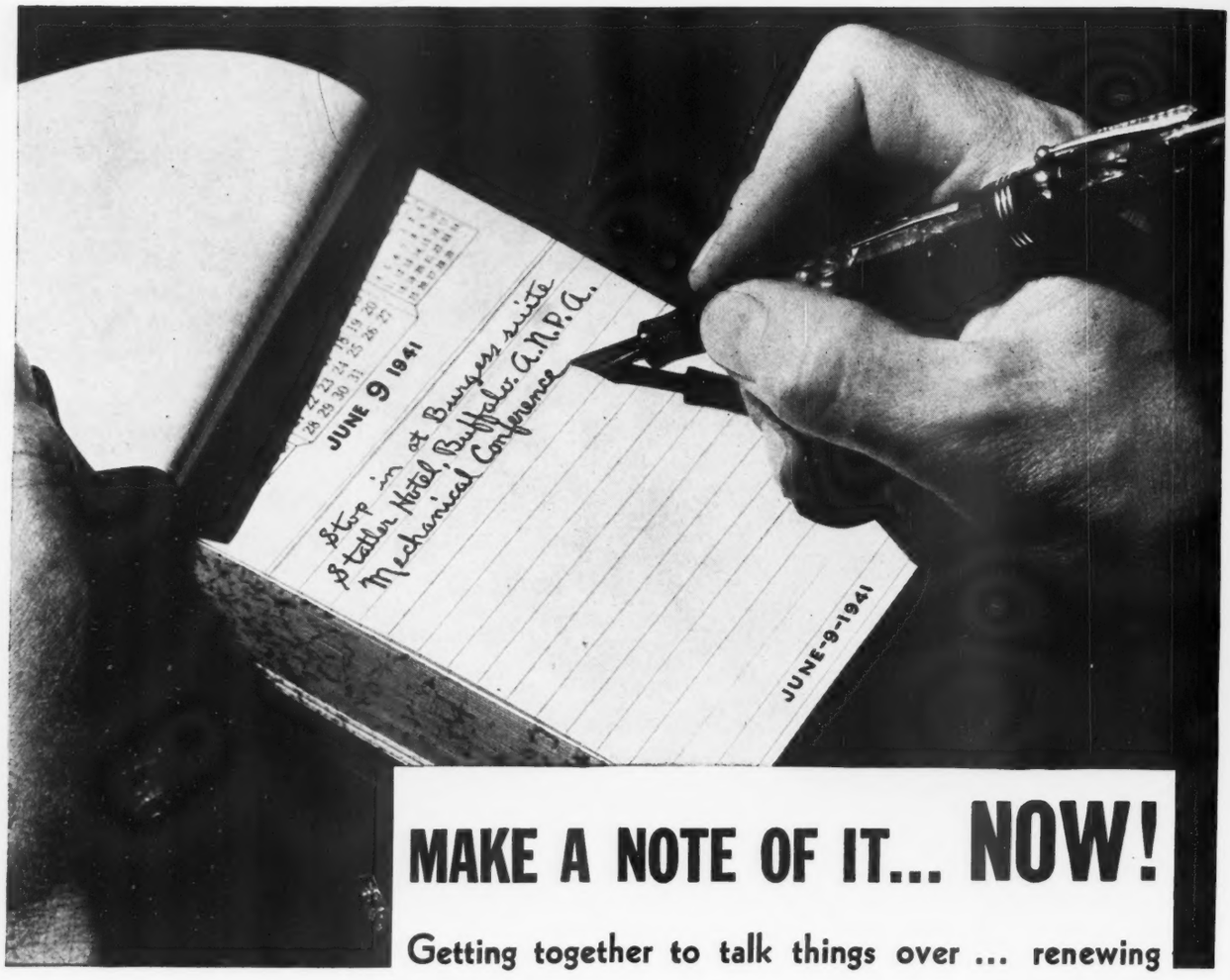

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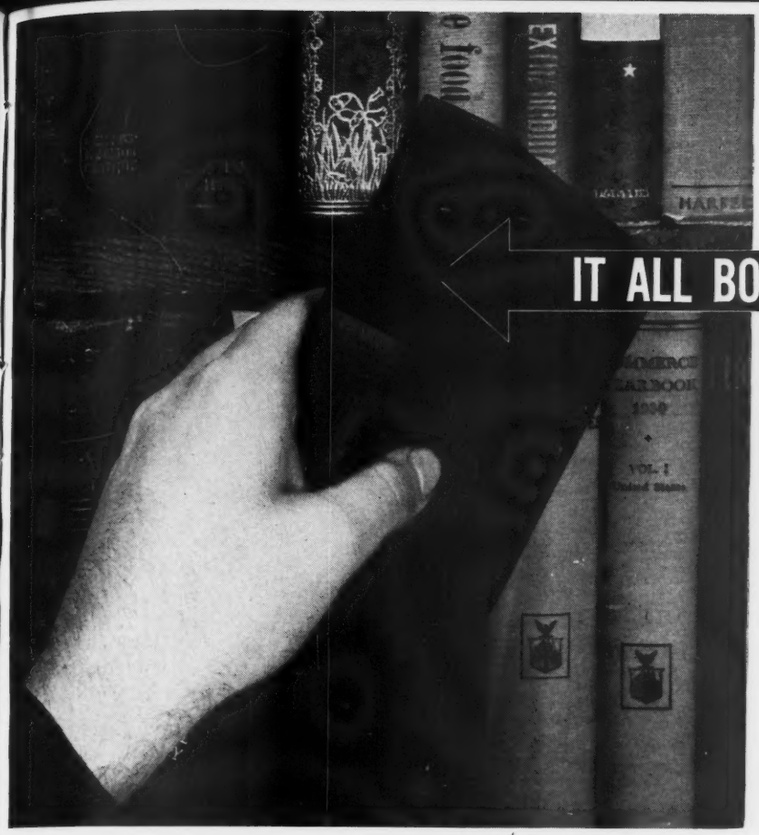

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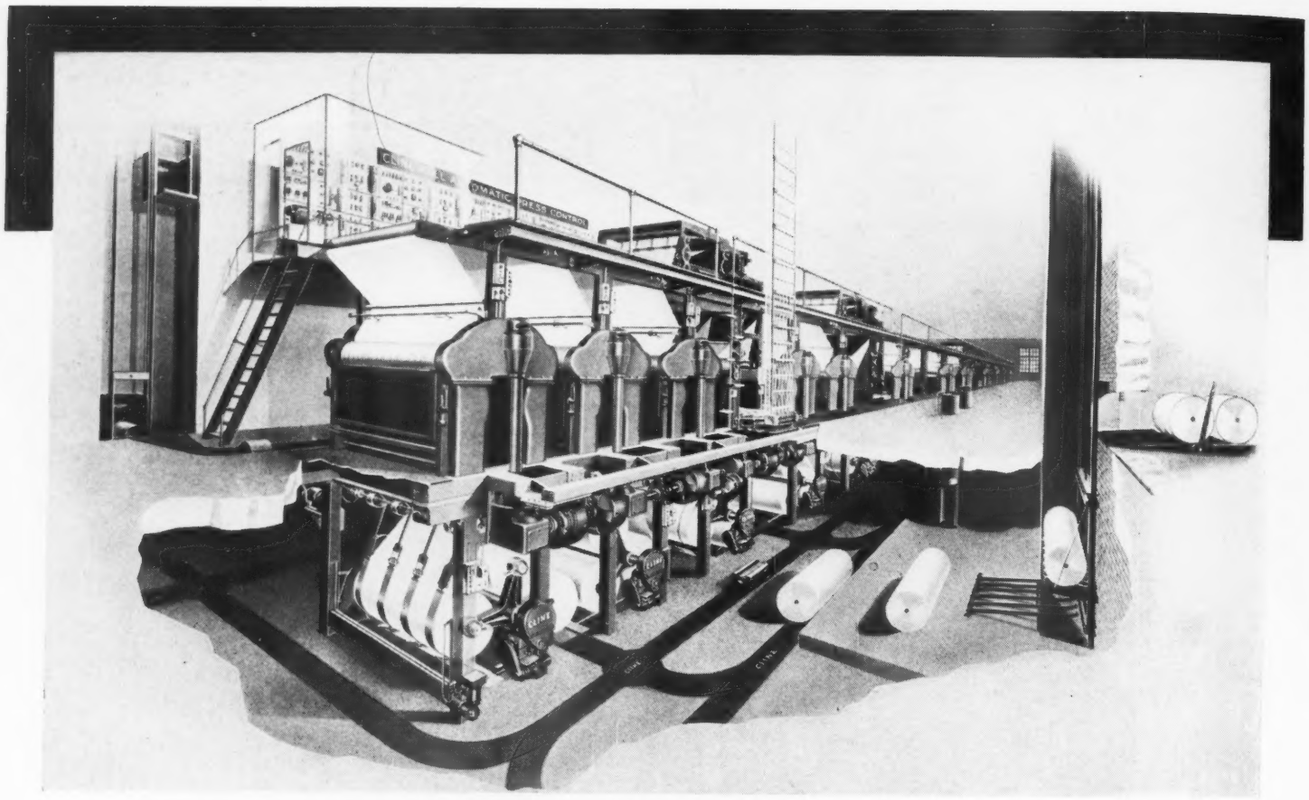

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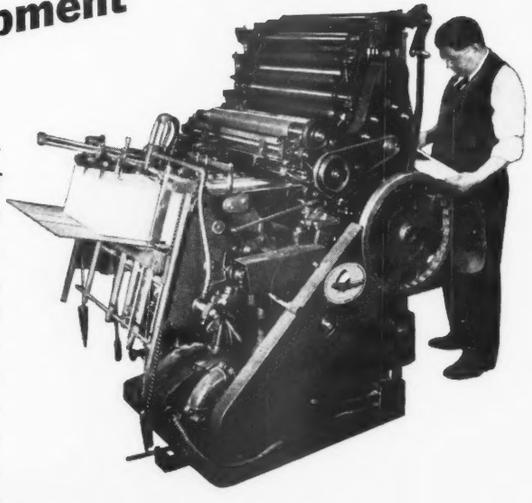

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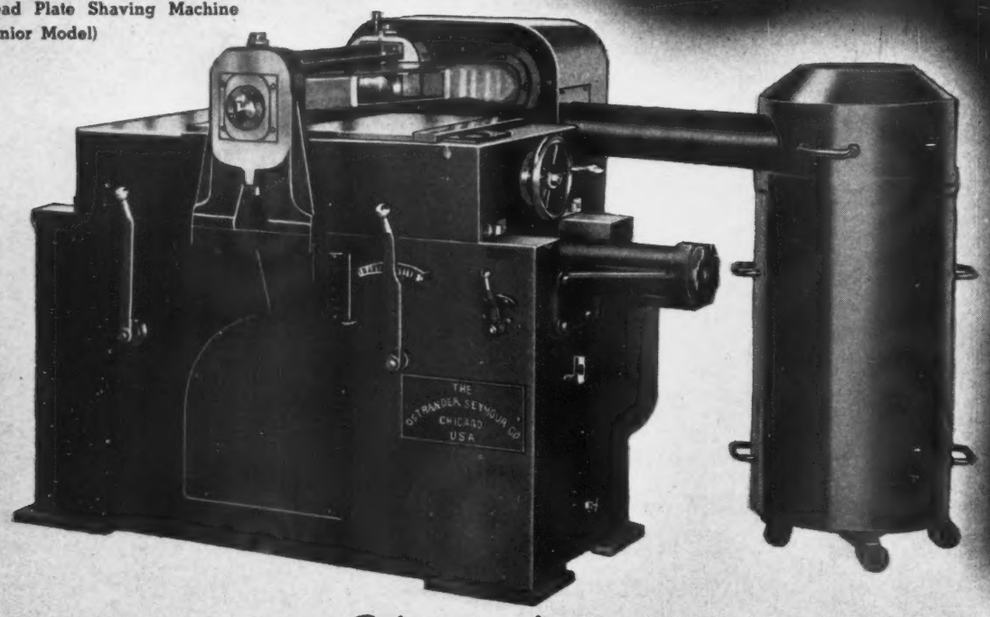

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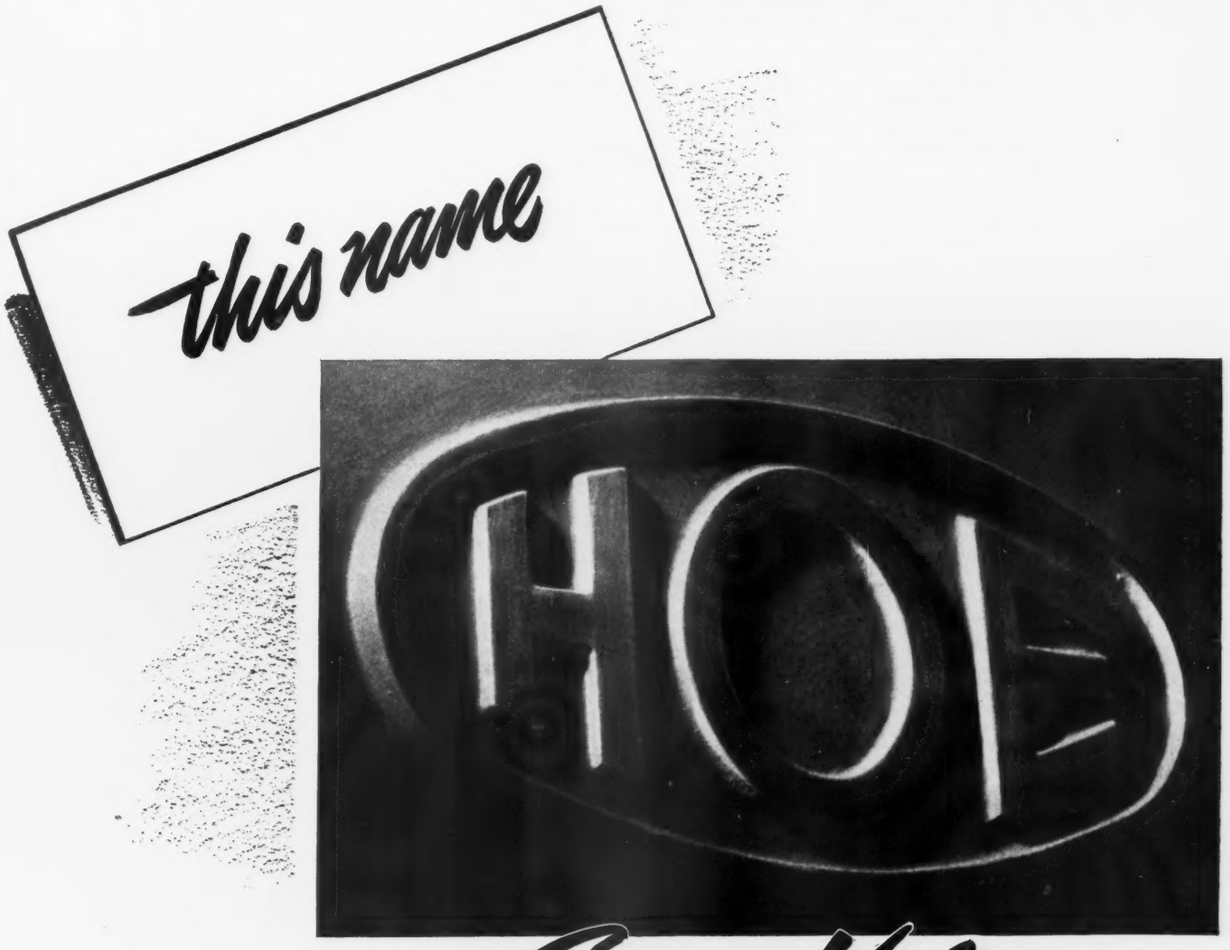

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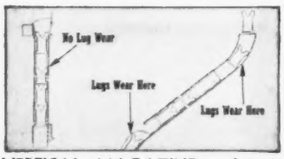
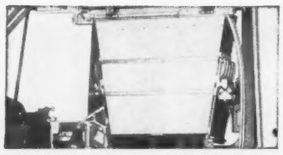
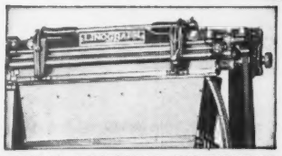


VERTICAL MAGAZINE — Insures lightning-like response. Eliminates matrix wear; magazines will not sag or warp.

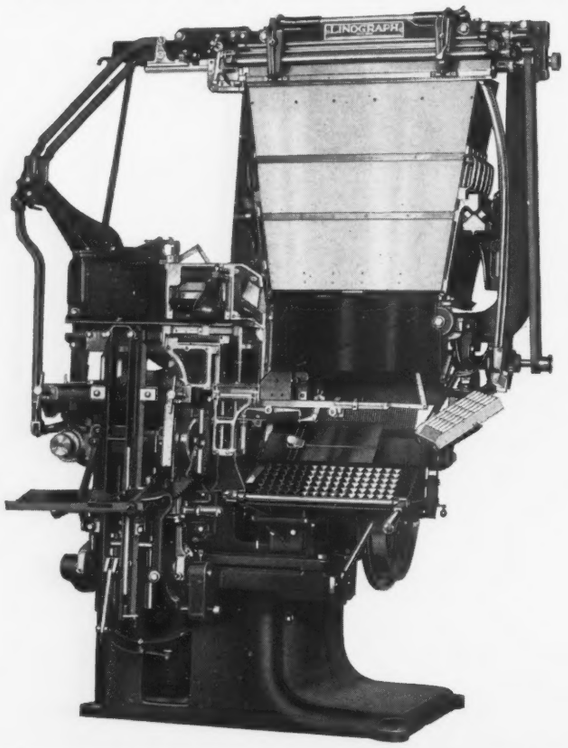


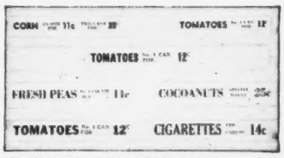
ONE TO SEVEN MAGAZINES—Up to seven main magazines on machine—finger-tip shift fastest, simplest yet devised

PARALLELOGRAM ELEVATOR ARMS — Assures positive seating and long life of second elevator bar.



EASILY ACCESSIBLE DISTRIBUTOR — 45% faster distribution; timing undisturbed when front screw is opened.





GROCERY AND DRUG ADS — Display ads set from one magazine — no mixer or side unit necessary.

ELEVATOR JAWS — High grade tool steel — No movable rails.

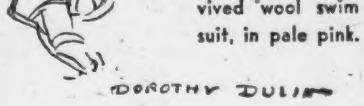
TYPE SET... *at less cost*
in less time... in better condition

- **THE LINOGRAPH "50"** is more than just another type setting machine. It is tomorrow's way of setting type today for publishers and printers.
- **AT LESS COST**— because of its simplicity of construction, savings of from $500 to $1000 are often possible when you buy a LINOGRAPH "50."
- **IN LESS TIME** — because the design of the LINOGRAPH "50" enables any operator to turn out more type (over 9 lines a minute with Teletypesetter).
- **IN BETTER CONDITION** — because Linograph engineered features provide accurate, clean casting results.

Let us send you our catalog — LINOGRAPH "50" is the best buy today!

THE LINOGRAPH COMPANY DAVENPORT, IOWA

2. A blue and white knitted swim suit and a tie-on skirt of red, white and blue striped cotton.



vived wool swim suit, in pale pink.

DOROTHY DULIN

By BETTINA BEDWELL.

JUST how far the women of this nation would have followed the fashions in beach clothes in their slow, year-by-year strip tease act is something we probably won't find the answer to this Summer. Because the new crop of beach styles has suspended further stripping.

Full of Eye-Appeal.

Some folk in the designing department of this breed of styles say it's "the times" that make further exposures something to shun. They claim that girls, in their present mood of pleasing men, will be wanting to look charming and not brazen.

But I doubt that any of you are going to mind this, because the beach and swim clothes of the coming Summer are incredibly gay in color, and full of fresh eye-appeal and the easy functional comfort for which American sports fashions are justly famous.

A new thought in the matter of slack suits comes up No'th from Palm Beach. It is the "He and She" slack ensembles worn by couples whose interest in each other is something they want the whole world to know about. Twin slack ensembles made for a man and a girl, they are. Tailored slacks, easy sports jackets and striped cotton sweaters, or sports shirts, form the combination.

Whether they're paired or in singles, slacks are a bigger fashion than ever. It's the style to have either the trousers or the shirt in gay color, or in bold printed stuff.

Contrast in color is a very big item in slack ensembles—for that matter, in most of the other beach styles. Printed skirts and one-color blouses for play suits and shark-skin bathing suits, with bold contrasting band trim, are two of that look very good for wear at the shore this coming Summer, quite as good as the slack suit. Shorts are still worn, but much less. Girls are going to be more feminine looking in very short pleated or gathered skirts over trunks, paired with blouses that sometimes look like gypsy blouses, only with short sleeves.

Beach colors are gay in no mean way. Yellow is very important, and so is a vivid sky blue, and red with green and white. There's no stopping the red, white and blue, as might be expected. Newest and most sophisticated color scheme is dead white with skin-tan, a handsome combination for those who like to be subtle. Violet is going beachward, too, but its future is dubious as it's not a sunshine color.

Swim Suits Less Revealing.

In swim suits the tendency is to the dressmaker type, very often with a full skirt. But the newest of all is the knitted swim suit, one-piece. Though low cut, it is less revealing than we saw universally in former seasons.

Capes are going out to the beach as the newest kind of wrap. They come in terry cloth and in sharkskin and in cotton gabardine and other cottons. The cape of "That Hamilton Woman" has been adapted to the beach, as is shown in Miss Dulin's sketch No. 1.

This wrap is made of white cotton gabardine with the Hamilton double capelet around the shoulders, both capelets lined in red, as is the cape-coat. The play dress, from Luella Ballerina, is made of white seersucker with the long waist appliqued in Indian motifs in bright red.

Red, White and Blue.

The knitted dressmaker swim suit, sketched No. 2, is made of navy and white striped knitted of cotton material pleated in the broomstick way, is a companion piece.

No. 3 is a one-piece knitted suit made of pink wool. A very low back is held by crossed knitted bands. The decolletage is edged with crocheted beading through which runs a woolen cord. This makes a flattering finish.

People who live in the real country can easily manage the matter, and so in a smaller degree can those who live in the suburbs. People who live in the city have more difficulty, but they can accomplish it if they will.

At present we are putting aside the matter of a general first hand interest in wild life, visits to the zoo, etc., and just thinking about the satisfying of a child's craving for pets.

Probably the most responsive and thoroughly satisfactory ani-

Random House, New York.

Animals have their place in the life of a child, and do more than merely give him pleasure, especially if he develops a lasting enthusiasm for them. So encourage this interest and all others he may have. Real interests are a constructive and valuable possession for your child to have.

The Young Naturalist's Book List is a leaflet of interest to parents, teachers and children of all ages. Send a large, stamped, addressed envelope to Mrs. Gladys Bevans, The News, 220 E. 42d St., New York.

The Correct Thing by Elinor Ames

Elinor Ames will answer questions concerning etiquette sent to her by readers of The News. Address "The Correct Thing," The News, 220 E. 42d St., New York, N. Y. State question plainly and send stamped, addressed envelope.

Pays Her Own Fare.

If a boy and girl who are in the same class meet in the bus, should the boy pay the girl's fare? They are acquainted but not really friendly. TOM.

Answer: No. The girl should pay her own fare.

She Buys the Tickets.

Is it wrong for a girl to telephone a boy and ask him to a school dance? E. T.

Answer: No, not if she has been out with the boy or has other reason to think he'd like to accompany her. Naturally, she pays for the tickets in advance under these circumstances.

No White Tie.

Why do you see so many bridegrooms wearing white ties with dinner jackets? I always thought the white tie was for full dress. EVA.

Answer: Right [illegible]

MAKING CALLS

"On a small post when one's friends have house guests, it is desirable and proper to call upon them. Bachelor officers should call upon young unmarried women visiting their friends, and pay them such

1. A white cotton gabardine cape-coat, lined with red, tops a white seersucker beach dress trimmed with red applique.

2. A blue and white

3. The newly revived wool swim suit, in pale pink.

Most Children Like Pets; Learn Much From Them

By GLADYS BEVANS.

DID you ever see a wild creature "display"? Whether it is a bird of paradise proudly spreading all his glory of color and feathers in the mating season, as you stand spellbound with your son or daughter before his cage, or a little pet chameleon at home, head high, distending the pale skin of his throat in a wide frill, it is a fascinating experience.

Have you given your children opportunities to know wild life, or encouraged a strong, spontaneous interest in it?

Children love the natural world. Haven't you ever noticed how all-inclusive this interest is? Don't you remember yourself—that is, if you were not a country child—how you adored the country in vacation time? And by country I mean sea, or lake, or woods. Don't you remember the deep appeal the whole natural world had for you and how rich your Summers were?

Childhood is in some ways a part of life that is comparable to the childhood of the race, which embraced first hand contact with the elements, plant and animal life. Children pass quickly through the stages of development from caveman days to civilization. In their play, their literature and their interests we see this, and educators and mothers must take it into account.

Primitive instincts constantly crop up. Our boys and girls are children of nature who must, in the course of a few years, adapt themselves to a civilization that it has taken thousands of years to develop. The more we take into account the fact that they are so closely akin to the natural world, that their feet are on the earth even while their heads are often in the stars, the more satisfying we shall make their lives.

Children Like Pets.

The love of animals is one natural feeling we should give children a chance to gratify. Most children have a craving for pets, though in some it is a more active need than in others. Where it is at all possible, something should

mal for a child to have is a dog or a horse. Cats they enjoy, but get less friendship from. Some children are devoted to birds, others prefer rabbits, guinea pigs, or white mice, to mention the most common.

But, you may say, it is not possible for us to have any of these pets; we just can't manage animals. They're too much trouble, they take up too much room, and are too costly. There are, however, animals you can manage among the lower forms of life, and these afford a tremendous amount of interest to a child.

A sense of responsibility in the child is developed, provided the animal is not given to him too young, in which case the care of it becomes a burden. No child should have any kind of a pet if he is too young in years or in capacity to handle it properly. This is especially true of dogs and cats, which are often tormented and really injured by young children.

Recommends Book.

In this connection I want to recommend a very fine book which can be used by parents as a guide in choosing pets for their children, until the boys and girls are old enough to read for themselves. Written by a naturalist, it fills a gap that has too long existed in our literature about so-called "pets." The book, which covers a wide range in specimens discussed, is "Our Small Native Animals—Their Habits and Care," by Robert Snedigar of the Museum of Natural History, New York, published by Random House, New York.

Animals have their place in the

Things have changed a lot since 1929...

...and so have

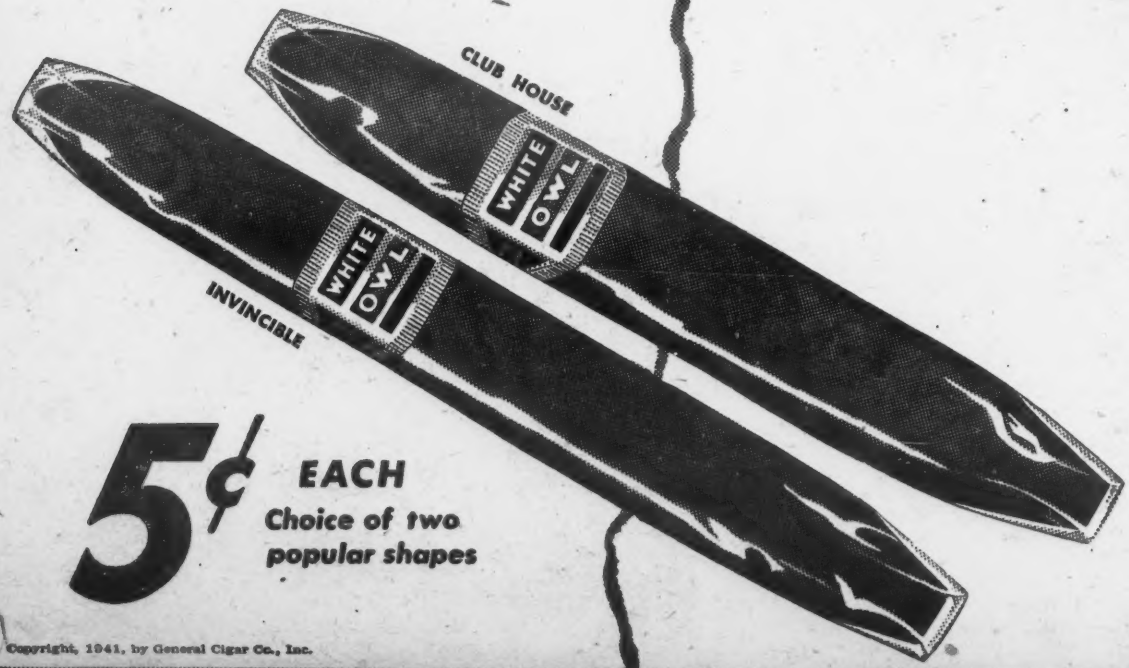
WHITE OWLS

WHAT something *once* cost is no sign of its value today. How a product stacks up by *today's* standards is what really counts.

White Owls have been improved many times in the past decade. True, this fine

White Owls have been improved many times in the past decade. True, this fine cigar used to cost more—but we don't try to tell you it's a "ten-cent cigar for 5¢." Better manufacturing methods . . . lower tariffs on Havana tobacco have all made it possible for WHITE OWLS to bring smokers a better cigar at lower cost.

Times have changed. No matter what it formerly cost, if the cigar you are now smoking has not been improved lately—if it is still the same old cigar of a decade ago, then you're missing something. ***Try a Blended-with-Havana White Owl and see what today's top standards are for taste and mildness in a 5¢ cigar.***



5¢ EACH

Choice of two popular shapes

Copyright, 1941, by General Cigar Co., Inc.

MORE MEN HAVE ENJOYED WHITE OWLS

Things have changed a lot since 1929...

—and so have

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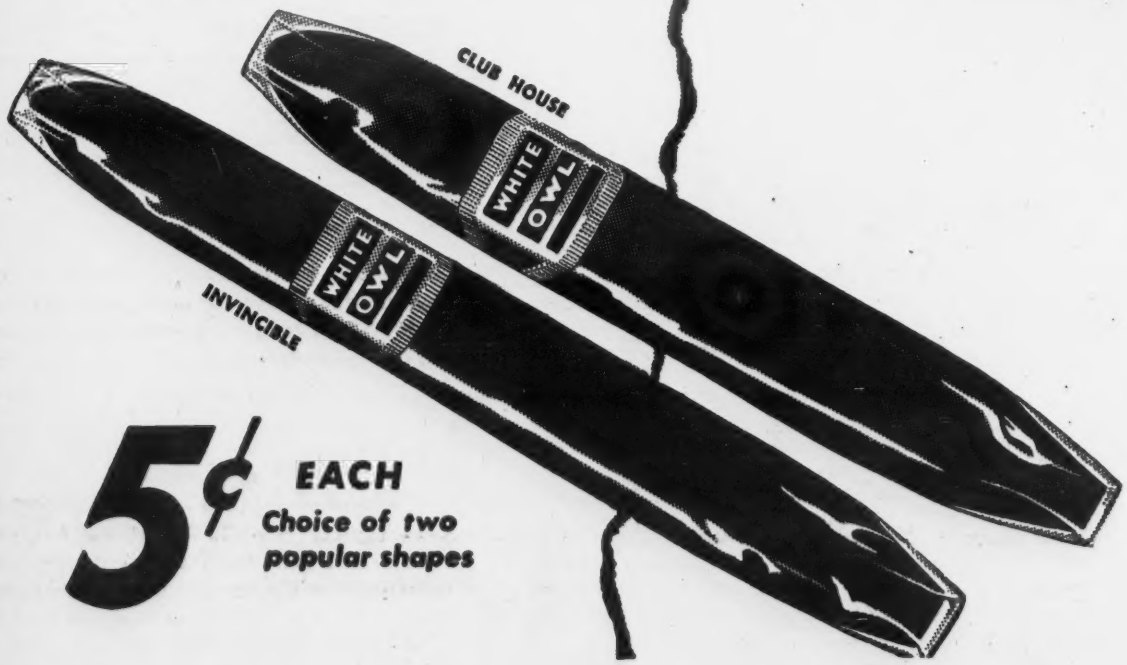


5¢ EACH

Choice of two popular shapes

Germans today reported their Stuka ombers attacking Crete had struck a severe low at Britain's Mediterranean fleet, damging seven, perhaps eight, warships just est of the invaded Greek island.

The official Germany news agency said e warships were dive-bombed, five cruisers nd a destroyer set afire and the maneuverbility of one battleship impaired by a bomb hat struck nearby. DNB said "the mighty attleship was forced sideways" by the force f the explosion. The Italian High Comand reported a torpedo-carrying plane had it another 10,000-ton British cruiser somehere in the Eastern Mediterranean.

The German High Command made no report on the Stuka-warship fighting, in fact, sued no communique on any of the Crete ngagement, but DNB spoke for Germany n the naval incident. A Nazi spokesman ld the United Press that the British warips "presumably were maneuvering in an ffort to effect a possibly imminent British vacuation from Crete to Egypt."

That well might be so. But it is an old azi tactic to start spreading rumors of a ritish evacuation long before one gets unr way. The Battle of Crete hardly has eached the stage where such an evacuation ould be necessary.

The German High Command's silence on rete probably meant it would take no offiial recognition of the battle until it feels e situation is well under control. It prers to inform the German people and their ubject nations only of victories.

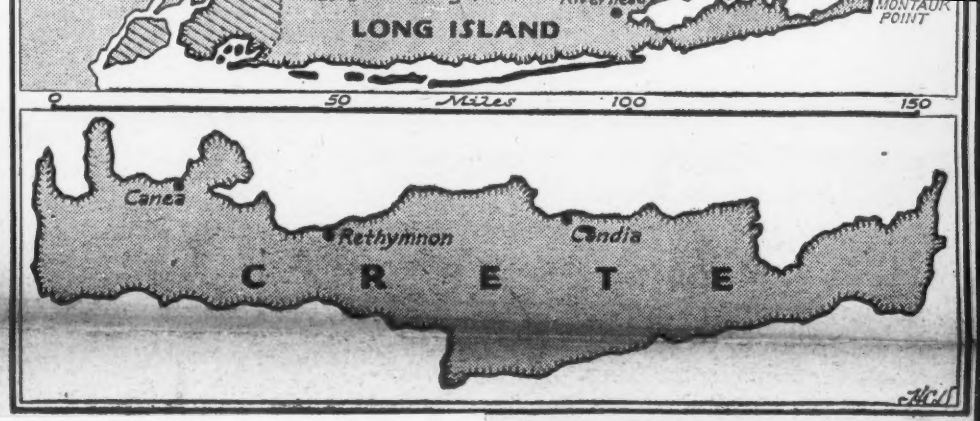
American newspapermen in Berlin had depend on "military quarters" for their rete news—meaning officials around High ommand headquarters who would talk but efused to be quoted by name.

Suez is the main objective of all Nazi aneuvering in the Near East. Once Crete alls, an all-out attack on Tobruk may follow. The British garrison there will probably be cleaned out before the drive into Egypt starts. Another probability after Crete is Cyprus, the British-owned island in the easternmost crook of the Mediterranean between Syria and Turkey. Cyprus has both air and naval bases and its fall would about clean British warships from that sea.

Nazi capture of Cyprus would have two other results:

¶ Reaction unfavorable to the British cause throughout the Arab world.

¶ Almost complete encirclement of Turkey, whose position rapidly is becoming more and more difficult.



g Island's 120-mile stretch. Imagine a to Montauk, with thousands of parathe north shore. An important differpancake, Crete a jumble of mountains.

ETINS

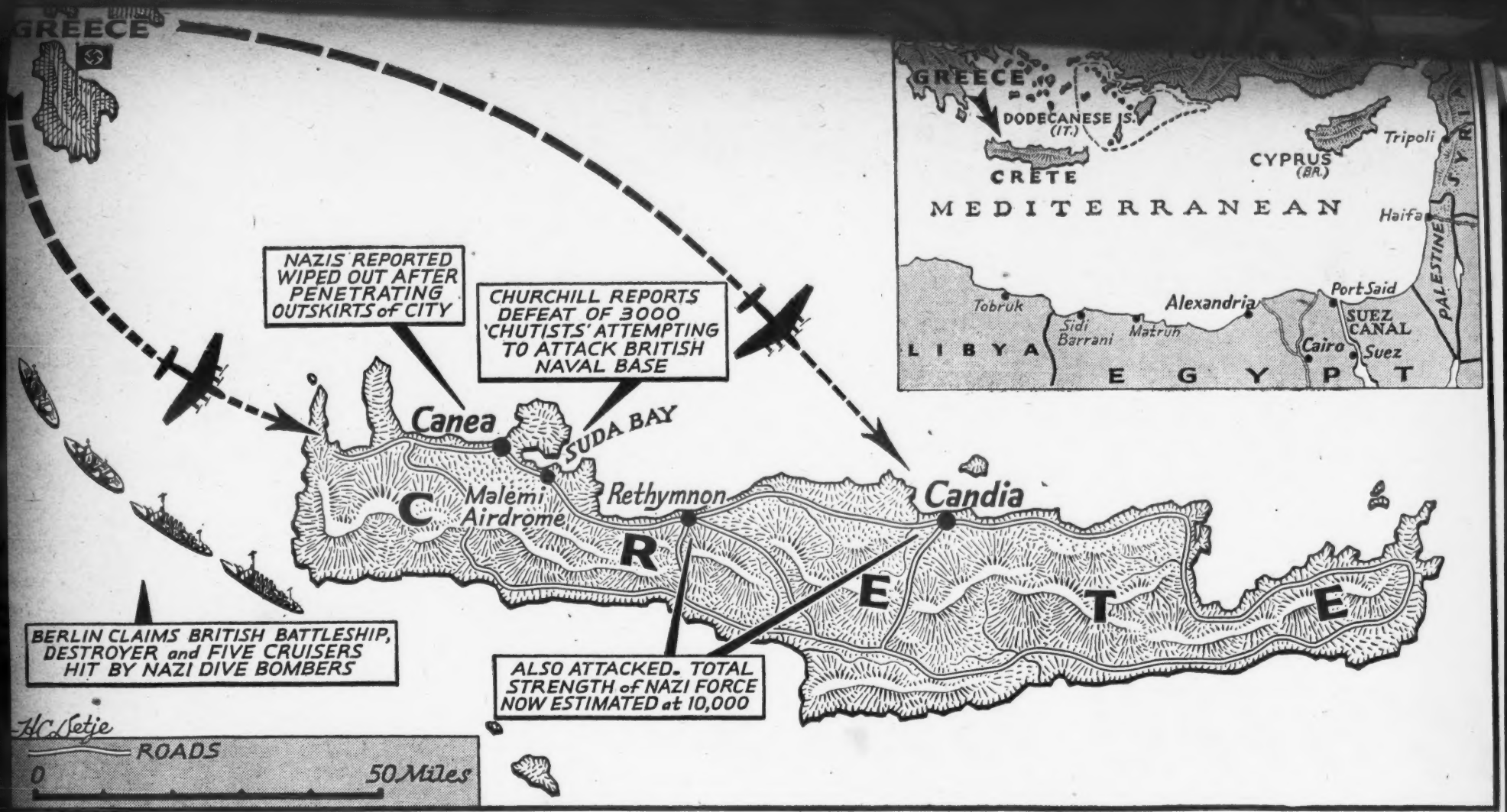
ce

der itself free to attack Germans in unFrance if the Vichy government permits . "The Germans have penetrated every tion of factories and airfields. It is behe terms of the armistice," it was said.

, Is Dead

ber of one of Japan's foremost financial eart disease. Mitsui was a director of sui Mining Corporation. The eldest son cated at the University of Birmingham,

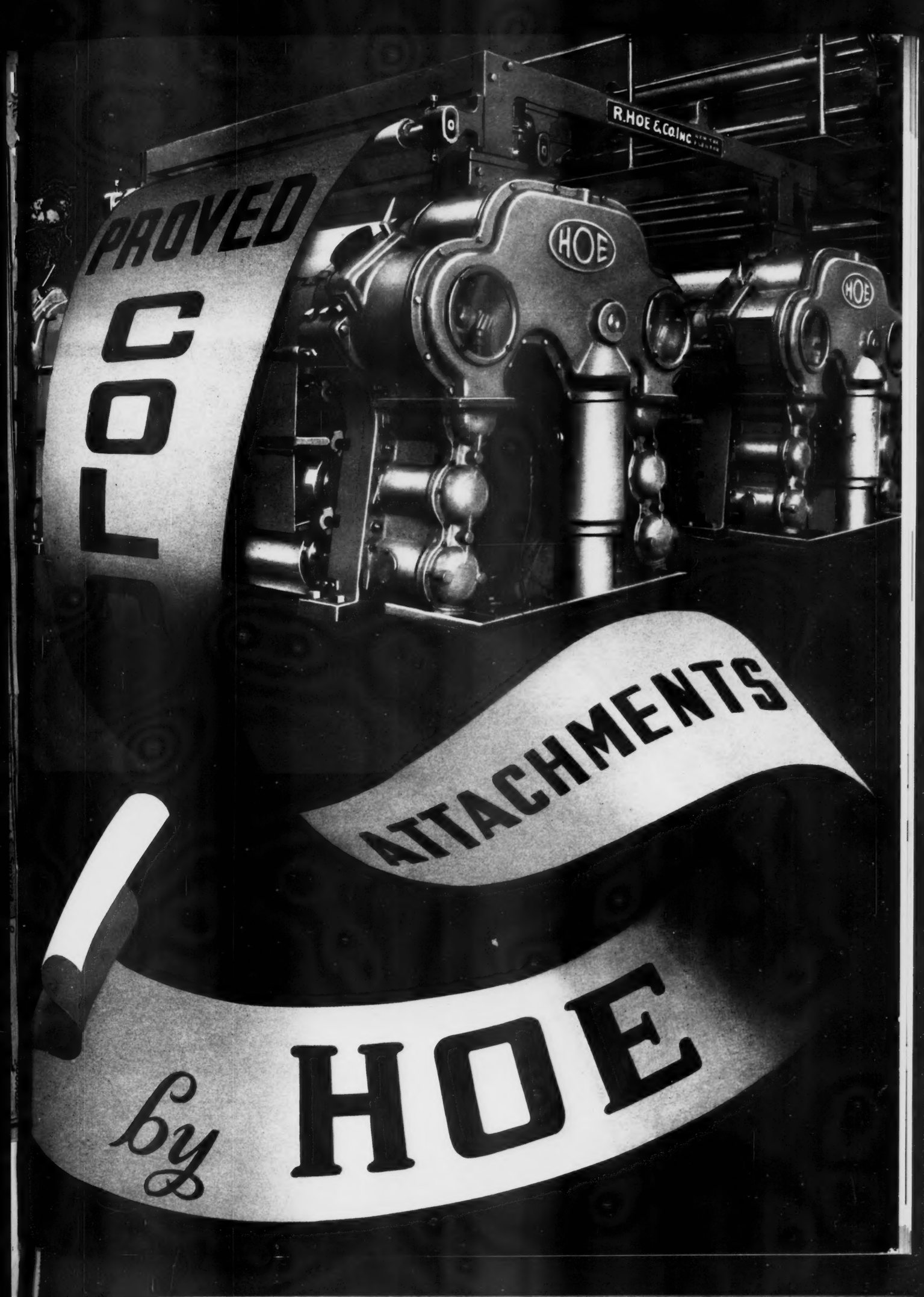
COMPARE ★★★
★★★ this specimen of Velo
Printing with regular newspaper printing on opposite sheet
See our advertisement on page 61
HUBER VELO GOLD SEAL INK AND PRINTING PROCESS (REG. U. S. PAT. OFF.)



Stukas Dive-Bomb British Fleet . . . Report 7 Ships Hit

Germans today reported their Stuka bombers attacking Crete had struck a severe

low. The British garrison there will probably


PROVED
R. HOE & Co. INC
HOE
HOE
ATTACHMENTS
by HOE

FOREWORD

The great strides which have been made in the reproduction of color copy in the daily newspapers during the past decade, and the ever-expanding interest in this type of work among local and national advertisers, are both definite indications that color in "dailies" has come to stay. Publishers are therefore keenly interested in knowing the facilities which are available for the production of this type of color work and with this end in view we are illustrating various types of mechanisms which we are in a position to supply for attachment to existing equipment. The type of equipment to be used depends to a large extent on the nature of the work to be produced, and on the design of, and available space on the presses to which the color facilities are to be attached.

A complete analysis of specific and varying color printing requirements is made available to publishers without obligations through the entire facilities of Hoe's Engineering and Research Departments.

The fact that Hoe has pioneered in the color printing field and is prepared to fulfill any of the varying and particular color printing problems confronting publishers today, we feel is evidenced by the numerous proved color facilities Hoe has sold and are in operation and which are described in the following pages.

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ONE ADDITIONAL COLOR AND BLACK
(EXTRA COLOR CYLINDER)

One and Two

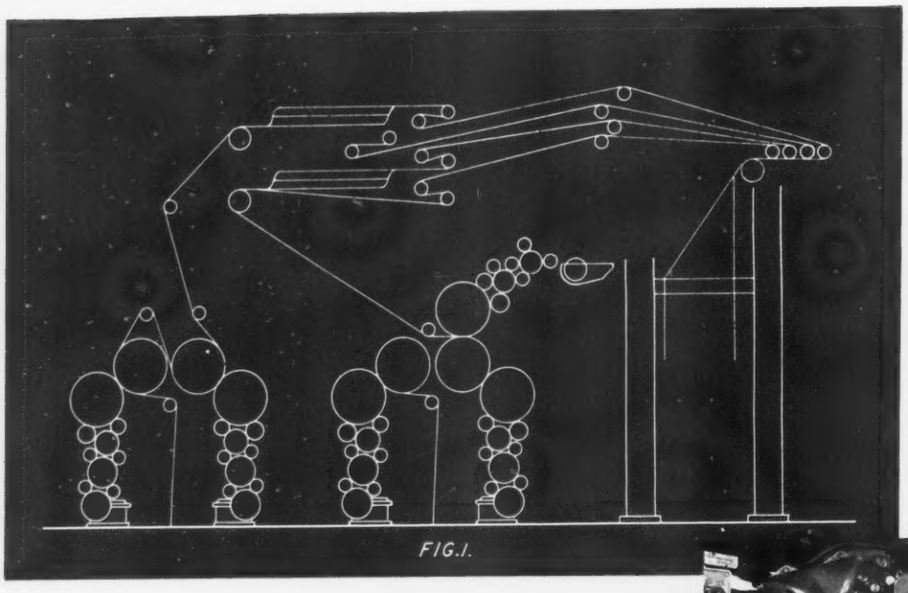
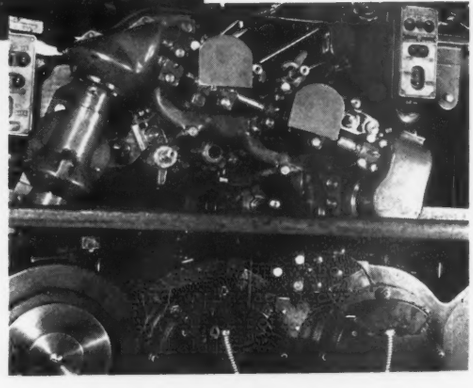


FIG. 1.



In the above illustration one extra printing is obtained with the use of what is known as an extra color cylinder consisting of a plate cylinder with corresponding ink motion. This is the most simple method of securing one additional printing without reducing the page capacity of the press. Attachments of this kind can usually be made to fit any type of press.

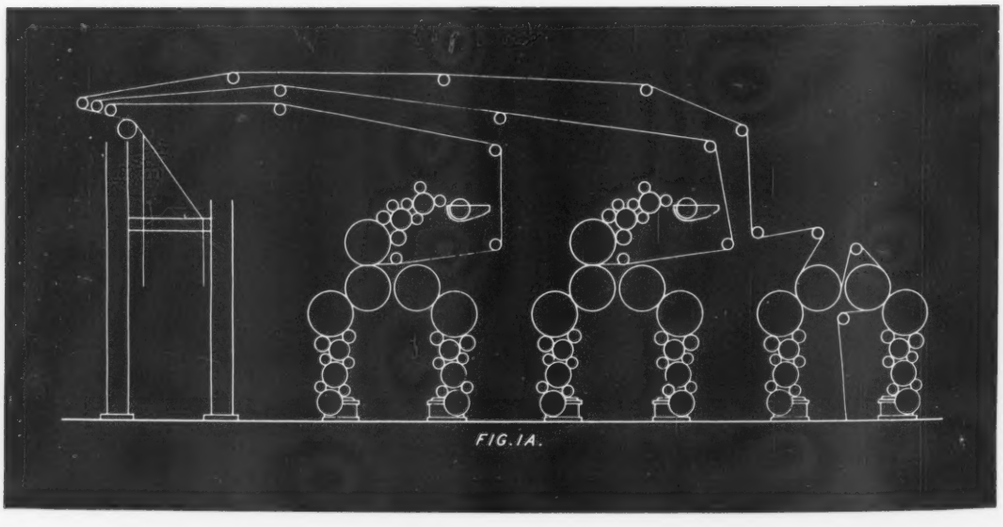


FIG. 1A.

In this illustration two devices such as shown in Figure No. 1 are illustrated in order to obtain an extra printing on two webs.

T SACRIFICING PAGE CAPACITY

6 ADDITIONAL *Colors* AND BLACK

ONE ADDITIONAL COLOR AND BLACK
(EXTRA COLOR COUPLE)

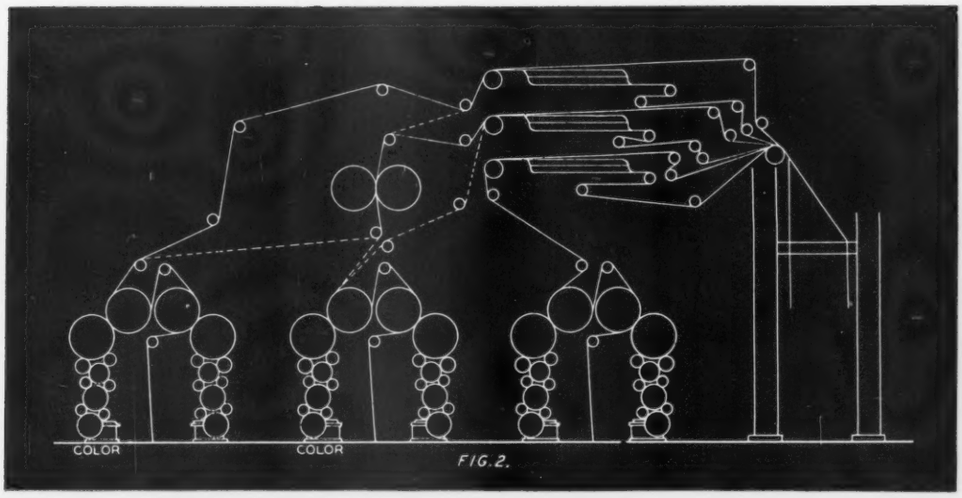
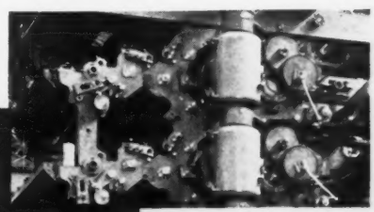


FIG. 2.

This arrangement shows what is known as a color couple consisting of an independent plate and impression cylinder so arranged that an extra printing may be obtained on a web from one or more units. An arrangement of this kind enables producing one extra printing without reducing the page capacity of the press and affords somewhat greater page placing facilities than the arrangement shown in Figure No. 1.

This device shows an alternate method of securing two additional printings with the use of two printing couples such as the printing couples used in conventional multi-color presses. This arrangement requires somewhat more height than the device illustrated in Figure No. 4 and in addition separate impression cylinders are provided in order to facilitate make-ready.

TWO ADDITIONAL COLORS AND BLACK
(TWO SINGLE COLOR COUPLES)



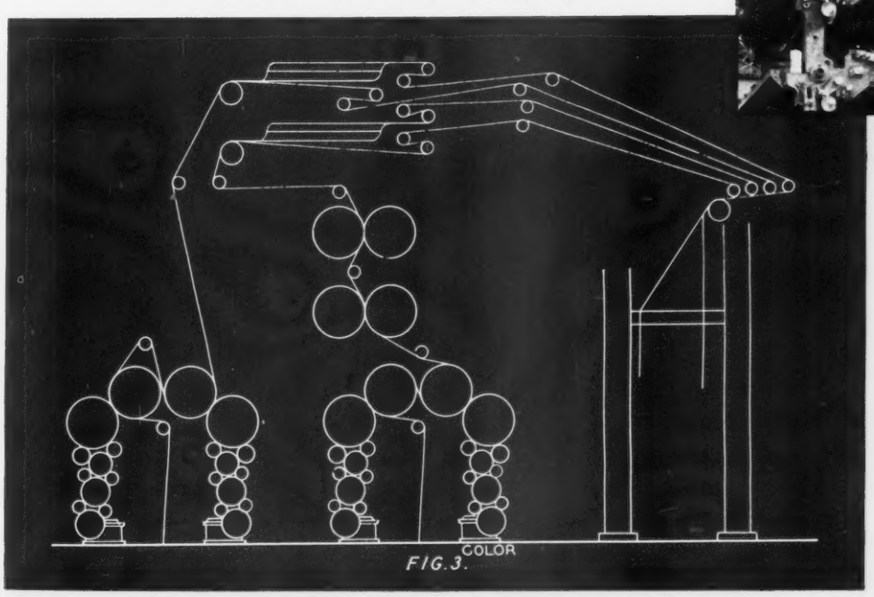


FIG. 3.

ADDITIONAL COLOR WITHOUT SA

Two ADDITIONAL

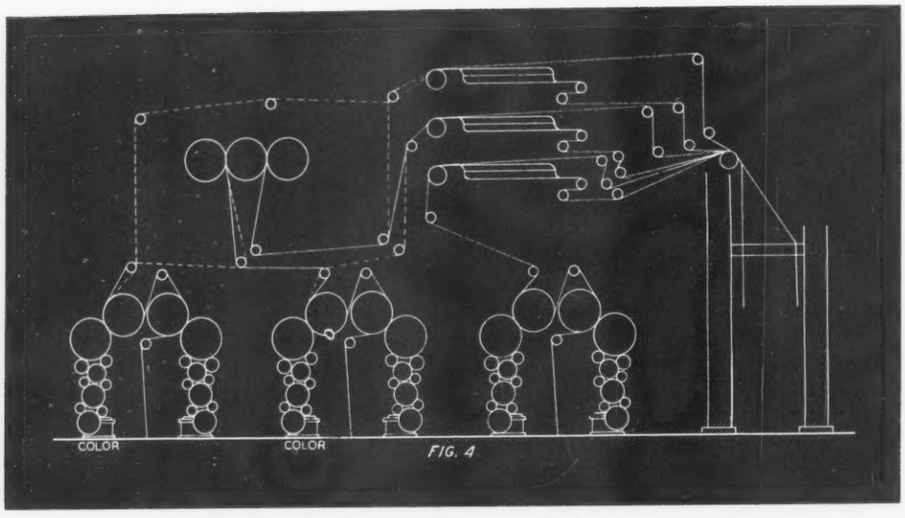
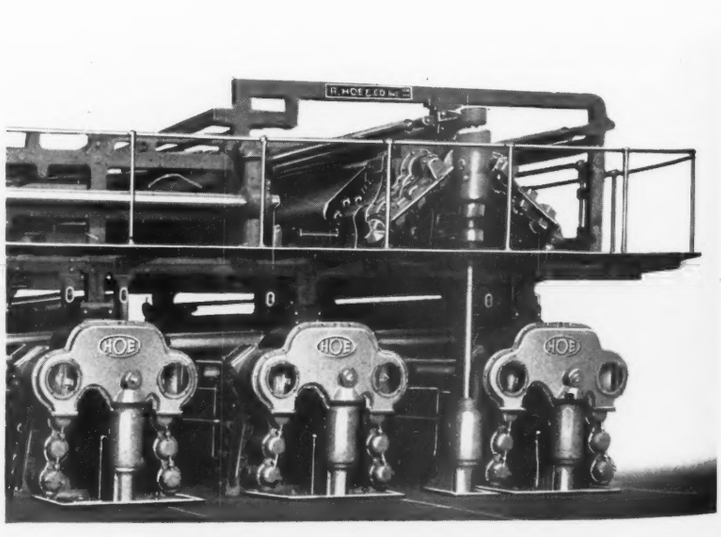


FIG. 4

TRI-CYLINDER TWO-COLOR ATTACHMENT

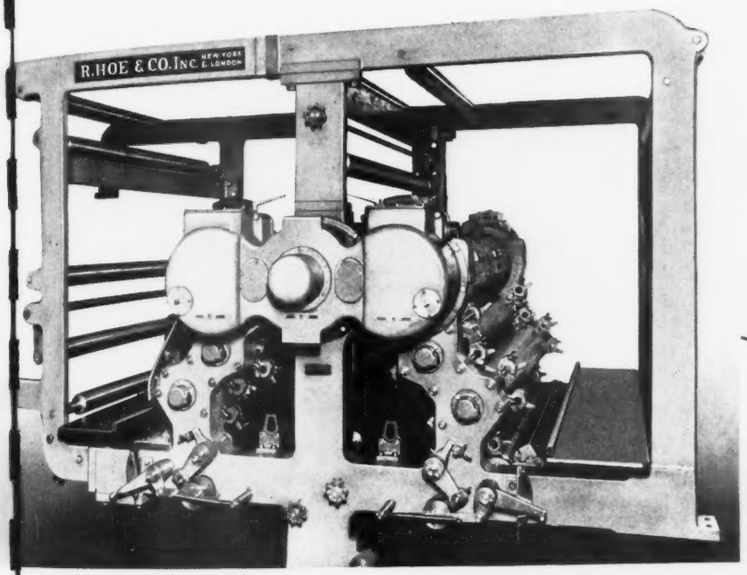
The three cylinder 2-color attachment, illustrated above, enables producing two additional printings without reducing the page capacity of the press. This attachment has met with favor in the trade as it enables producing three color work and can usually be arranged so that the color may be obtained on a web from more than one unit. The design is such as to require minimum pressroom height aud the cylinders may be reversed so that the printings may come on either side of the web.

View of operating side of Hoe Super - Production Two - Color Printing Attachment for daily newspapers, precision built with ball-bearing inside-mounted inking rollers, micrometer impression adjustment, patented close tolerance roller bearings, etc. Capable of producing fine quality newspaper color work at highest speeds.



TSACRIFICING PAGE CAPACITY

Colors AND BLACK



The Times-Picayune Publishing Company
601-615 NORTH STREET

The Times-Picayune
ESTABLISHED JAN. 25, 1837
ISSUED EVERY MORNING AND SUNDAY

New Orleans States
ESTABLISHED 1879
ISSUED EVERY EVENING EXCEPT SUNDAY

NEW ORLEANS
November 30th
1 9 3 5

Mr. H. M. Tillinghast, Vice-Pres.,
R. Hoe & Company, Inc.,
138th st. and East River,
New York, N. Y.

Dear Mr. Tillinghast:

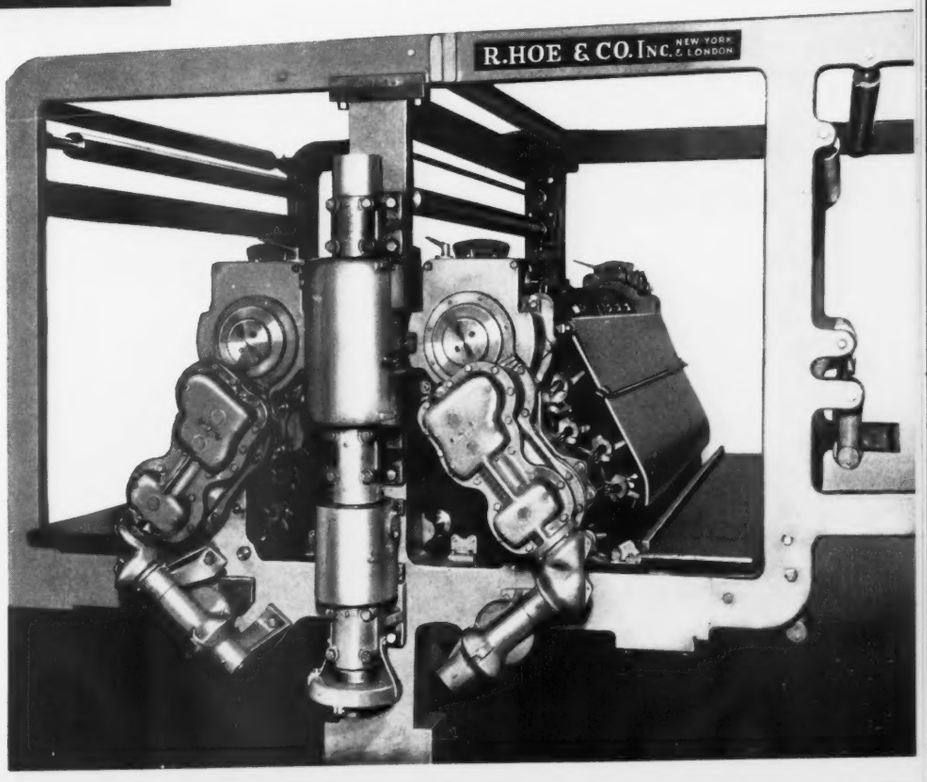
You will be interested in knowing the way color advertising was received in New Orleans and of the remarkable success we have had with our new Hoe color units.

During the first month after installation of these units, we published fourteen color advertising pages! We are highly pleased with the favorable comments received from both advertisers and readers.

Enclosed are two of the color pages which created much favorable comment both from advertisers and the public. One is our own page advertising our color equipment. The other is the color advertisement of Maison Blanche, one of our large department stores.

Yours very truly,
THE TIMES-PICAYUNE PUBLISHING CO.
J. Hardee King,
Production Manager.

The new Hoe Daily Newspaper Two-Color Printing Unit gives two extra printings on either the first or second impression side of a web up to 4-pages when running straight, or 8-pages when cylinder collecting. The practicability of this new unit, which assures the greatest selection of color page position within a given product without sacrificing page capacity, is evidenced in the letter reproduced on this page from the New Orleans Times-Picayune Publishing Company which recently installed two of these units on its line-type Hoe Presses.



ADDITIONAL COLOR WITHOUT SA

3 ADDITIONAL *Colors* AND BLACK

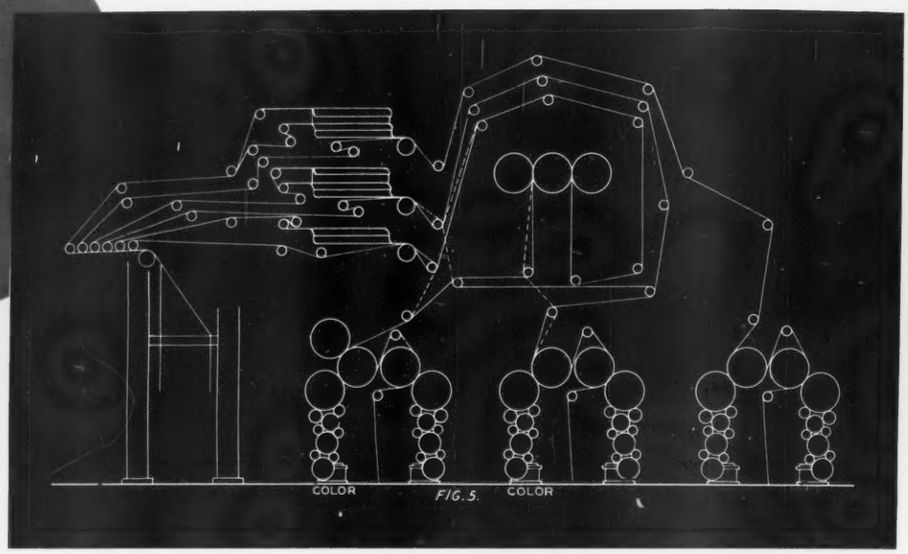


FIG. 5.

Shows an arrangement such as shown in Figure No. 4 operating in conjunction with a color cylinder as shown in Figure No. 1. An arrangement of this kind permits producing 4-color work without sacrificing page capacity. The arrangement is also such that one additional printing may be obtained on one web and two printings on a second web. The 2-color attachment may be reversible so that the printing from it may come on either side of the web.

3 ADDITIONAL *Colors* AND BLACK

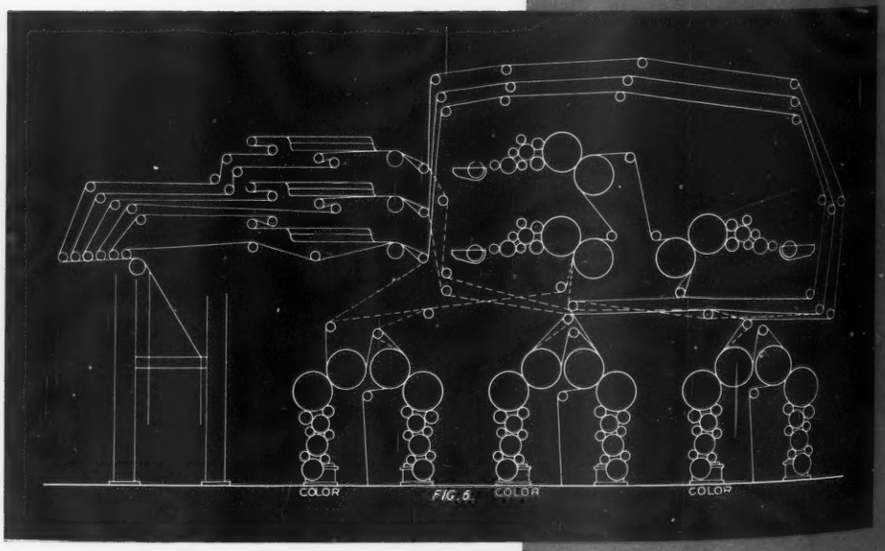


FIG. 6.

This shows an arrangement of printing couples with the ink motion disposed in a manner to limit the height of the equipment. While three printing couples are illustrated, any number of couples desired may be furnished so as to secure 1, 2, or 3 additional printings. These devices may be arranged so that an extra printing may be obtained on the web from any adjacent unit thus offering versatility in the placement of the color copy.

TSACRIFICING PAGE CAPACITY

3 Colors

AND BLACK FROM COLOR ATTACHMENT WITH CLOSE COUPLED PRINTING CYLINDERS

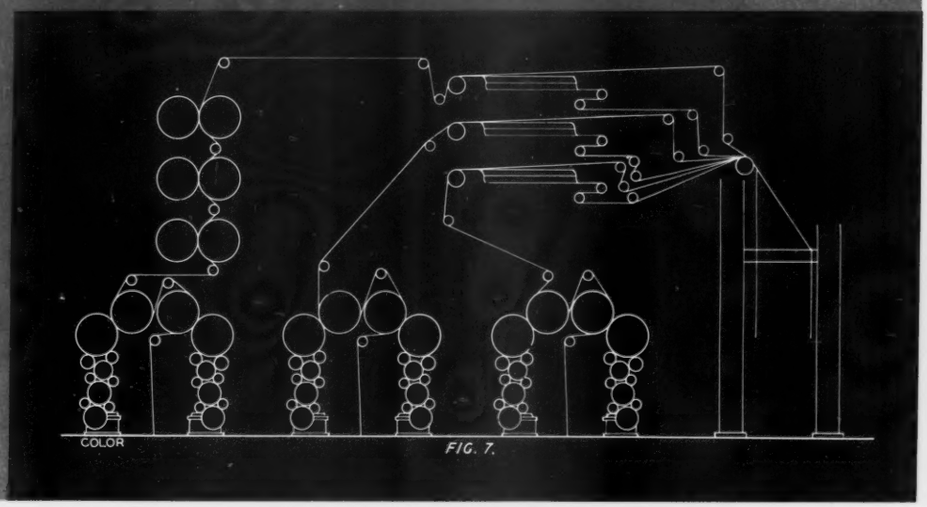


FIG. 7.

The above is also a three color printing attachment but of the close-couple type with shortest possible leads between impressions most conducive to close register. Attachments of this type are applied as close as possible to the main press units from which the first printing is obtained for four (4) color jobs (three colors and black). Three form rollers and movable ink carriages are incorporated in this close couple design.

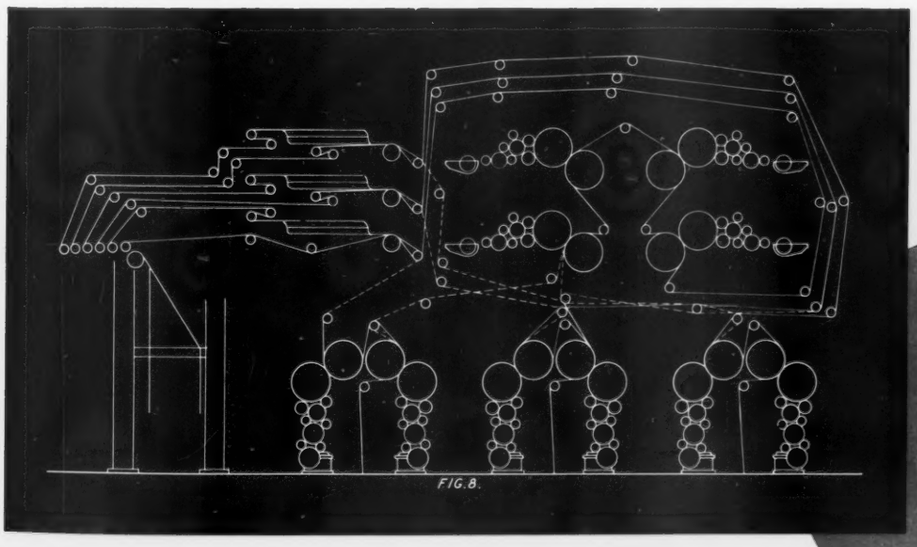


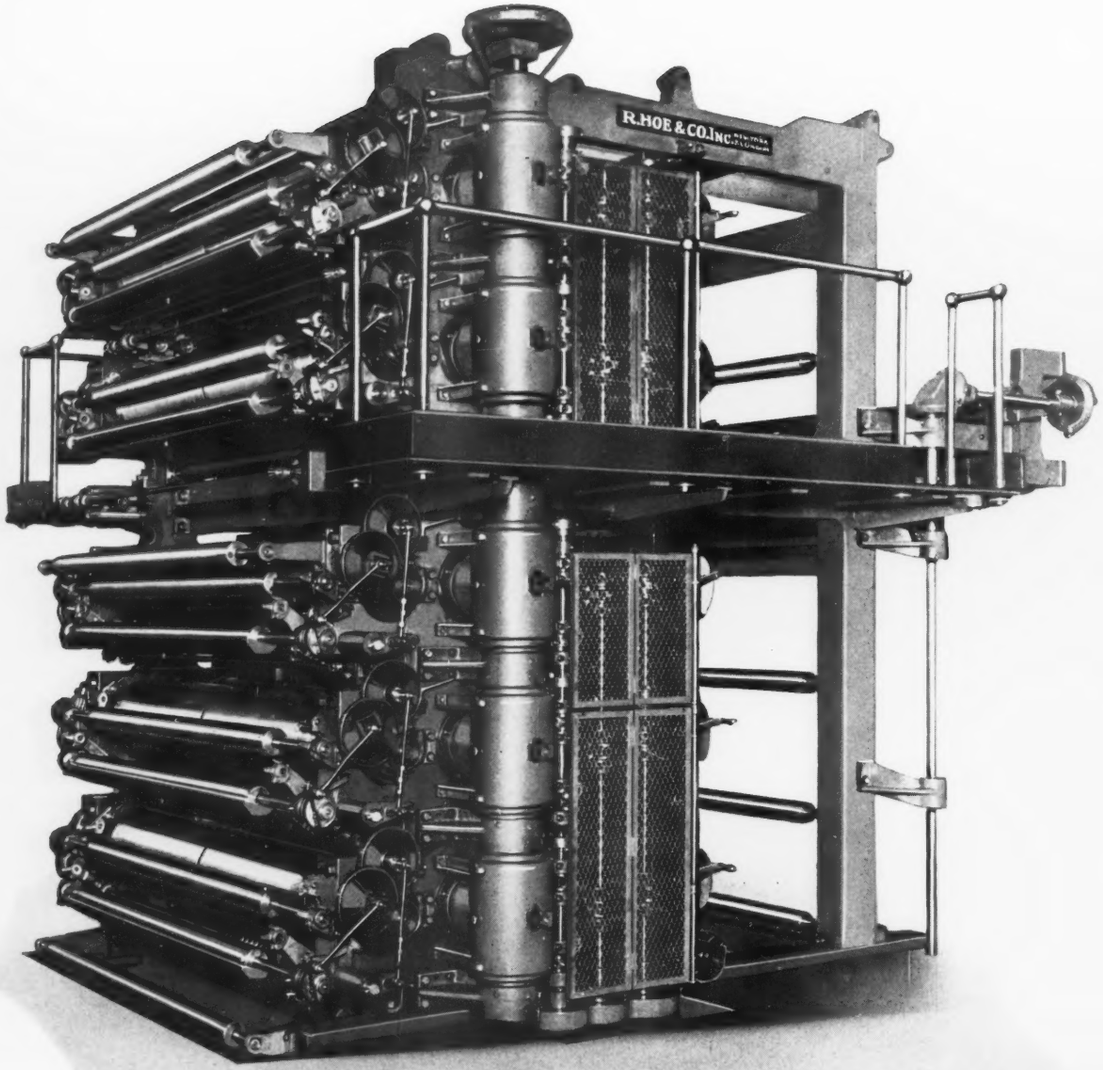
FIG. 8.

3 Colors

AND BLACK (4 PRINTINGS)

This is the same type of arrangement illustrated in Figure No. 6 excepting that the fourth printing couple is shown so as to produce four printings in sequence with uniform spacing between printings without the necessity of running any color on the main press units. Several arrangements of this kind are in use at the present time producing nationally recognized fine color work. The arrangement of units may be as shown or printing couples such as illustrated in Figure No. 7 may be furnished.

ADDITIONAL COLOR WITH FOUR PRINTI S O



Five color printing attachment with ink carriages in running position.

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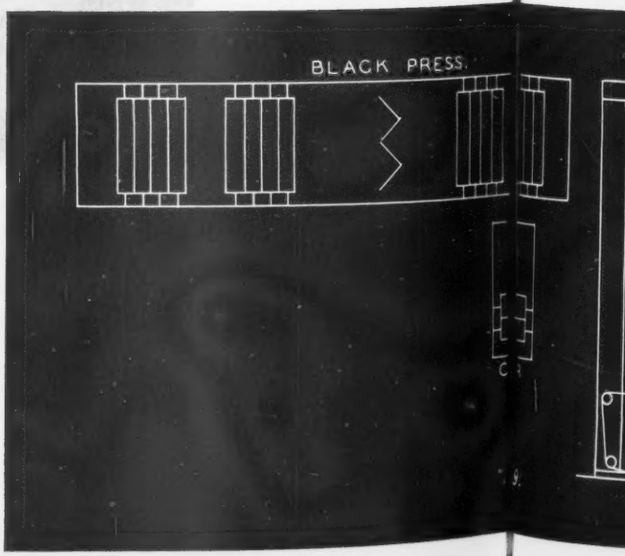

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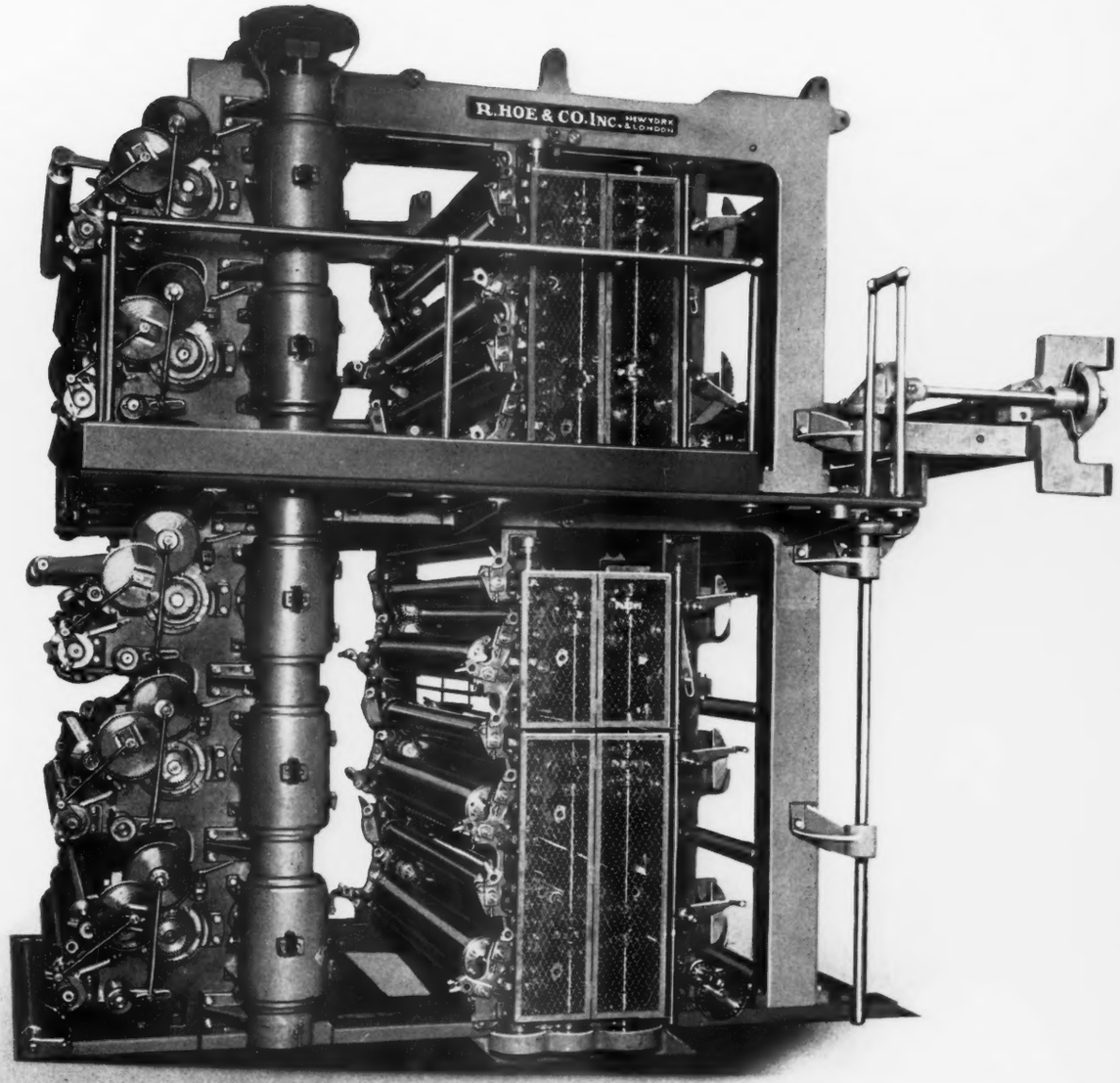

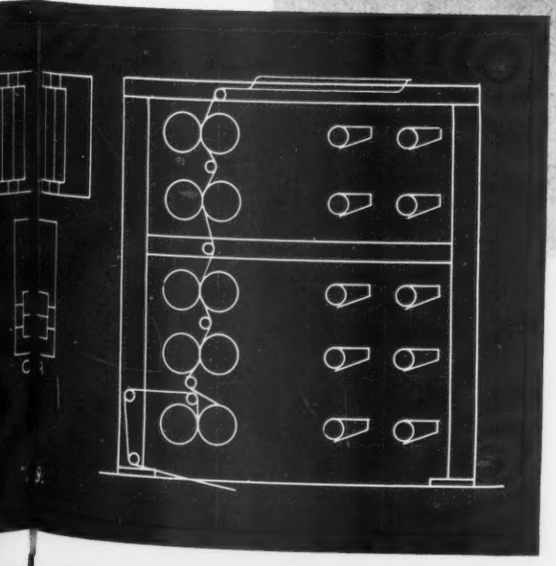

Five color printing attachment with ink cylinders moved out of running position to facilitate plating.

OTHER MEANS OF OBTAINING EXTR C

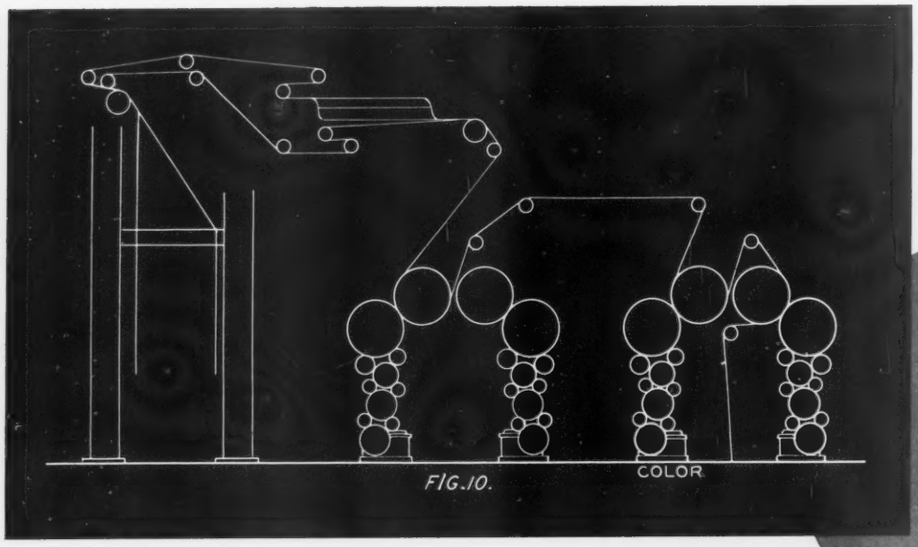

FIG. 10.

1 ADDITIONAL Color AND BLACK

This arrangement shows one of the more commonly used methods of securing one additional printing by simply running the web from one unit to the other with compensator for register and using an extra color fountain in order to avoid the necessity of using color ink in the black fountain. The necessity for the color fountain may be eliminated by changing the ink in the regular black fountain or pump or by the use of a dual ink feeding mechanism as shown in Figure No. 18 or one of the auxiliary devices shown in Figures 14, 15 or 16.

The arrangement shown below is also one of the more or less conventional methods of securing two additional colors on either a half or full web by running either a half or full web through a second unit. This arrangement necessitates the use of compensators and slitter rollers and the reversing of one printing couple. If it is not desired to change the ink in the regular ink fountains or pumps, one of the auxiliary ink feeding devices shown in Figures 14, 15, 16, 17 or 18 may be used. This arrangement, of course, reduces the page capacity of the press, although if only a half web is run through the second unit, the opposite side of the unit may be used for regular black printing from a half roll.

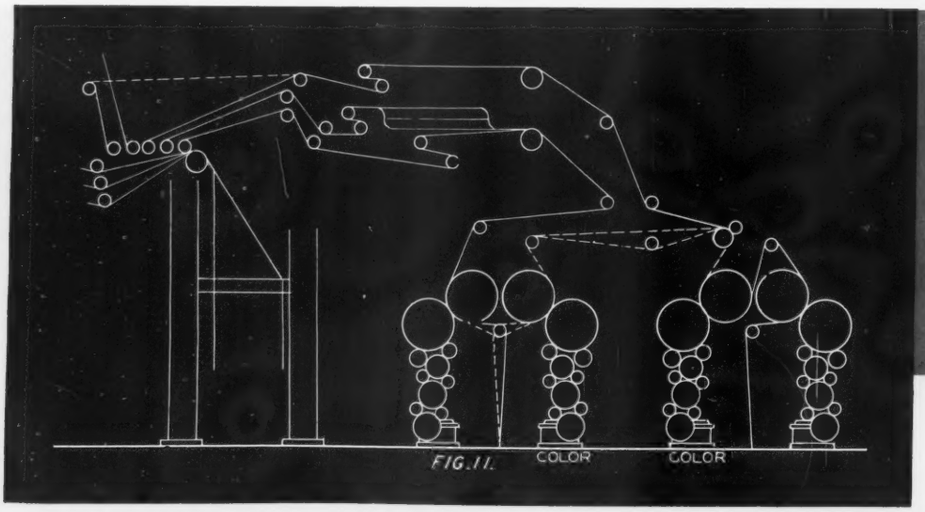

FIG. 11.

2 ADDITIONAL Colors AND BLACK BY REVERSING ONE PRINTING COUPLE •

COLOR ON EXISTING EQUIPMENT

The arrangement shown here employs a color printing couple similar to that shown in Figure No. 1 together with the reversible features described under Figure No. 11. An arrangement of this kind permits producing four color work but reduces the capacity of the press by one unit. The color ink may be supplied by any of the methods outlined in Figure No. 11.

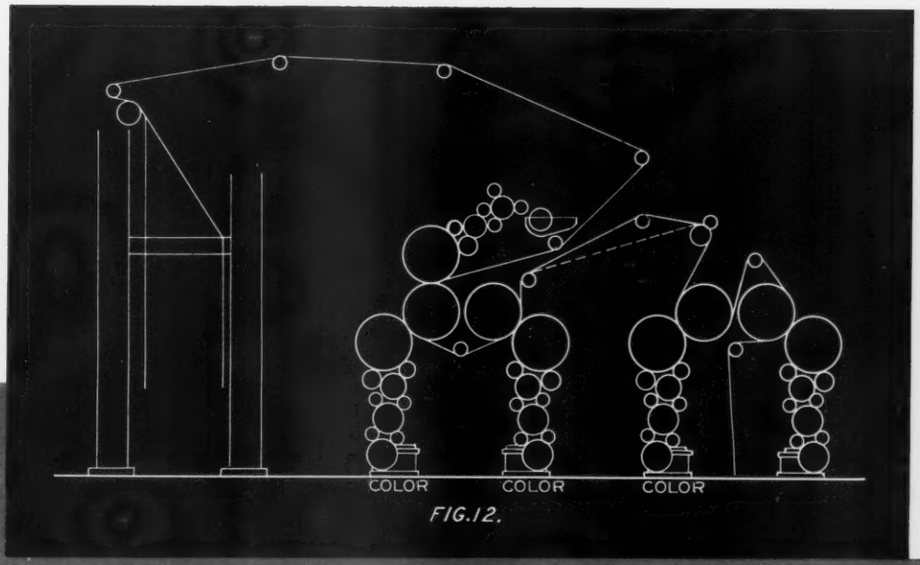

FIG.12.

3 ADDITIONAL *Colors* AND BLACK WITH EXTRA COLOR CYLINDER AND REVERSING ONE PRINTING COUPLE •

The arrangement shown here illustrates a method of securing four printings on two sides of a half web by the reversing of two printing couples and the use of a double-ender arrangement. By running the web from unit No. 1 through units 2 and 3, it is possible to produce a perfected product with one printing on one side and four on the other.

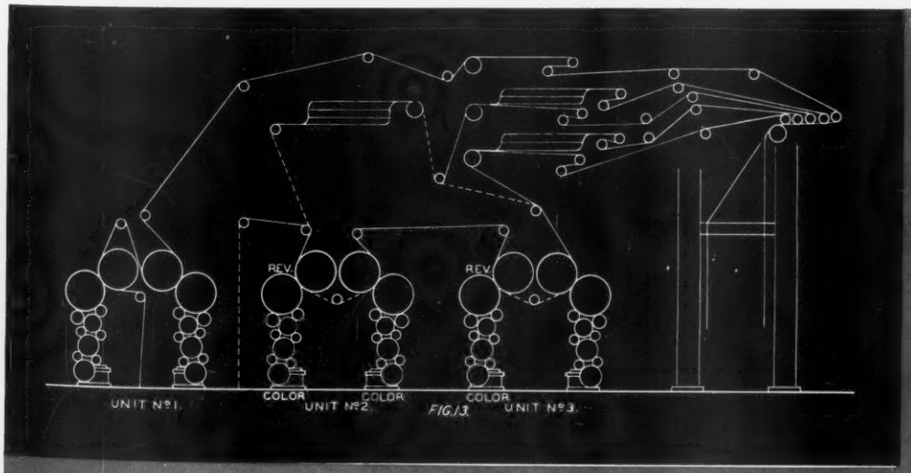

FIG.13.

3 Colors AND BLACK (4 PRINTINGS) ON EACH SIDE OF HALF WEB USING DOUBLE ENDER ARRANGEMENT AND REVERSING TWO PRINTING COUPLES •

New HOE PORTABLE AUXILIARY INK PUMP

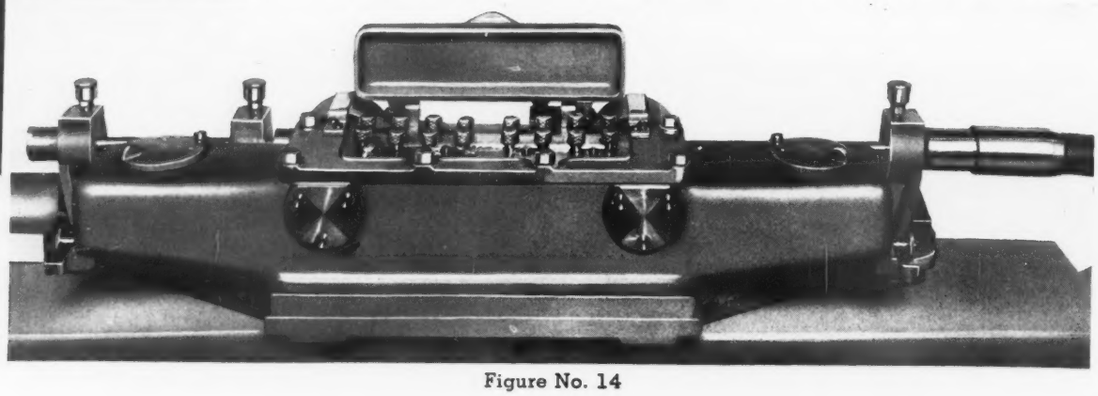

Figure No. 14

To meet the demand for dependable portable color equipment with positive ink control and to facilitate the placing of color on any desired page quickly and with the least possible inconvenience, Hoe engineers designed and perfected the Hoe Patented Portable Auxiliary Ink Pump illustrated above.

The Hoe Portable Ink Pump is designed for use with presses equipped with Hoe Automatic Pump System of Ink Distribution and like the regular black pump the portable pump has positive individual column control requiring no ductor roller equipment. The reservoir with which each pump is equipped holds approximately one gallon of ink and the filling is done manually.

Being self-contained, the portable pump is mounted on its own base which is designed to fit on top of the regular black rail so that it does not interfere with aisle space between units. A flexible shaft with suitable adaptor for the plate cylinder ends from which the pump is driven provides an efficient and quickly installed portable drive. The pumping unit is also easily and quickly installed and removed, since it is made to fit in the place of the regular ink rail bar over the portion of the rail where the color is desired and is held in place by two bolts.

Hoe Portable Auxiliary Pumps are two pages wide and where color is desired across the full four page wide web two pumps may be connected and driven in tandem as shown in Figure No. 15 below. Only one color is handled in each pump, although in the tandem arrangement a different color may be used in each pump.

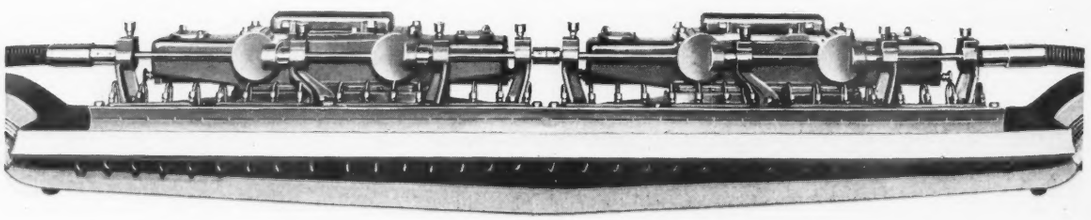

Figure No. 15

Two Portable Pumps connected in tandem.

. . . . AND FOUNTAIN FOR COLOR

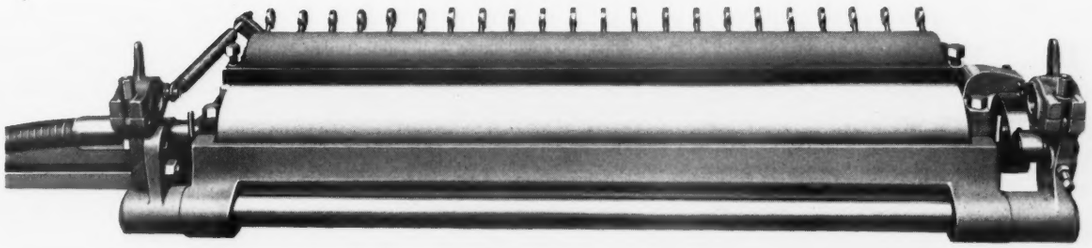

Figure No. 16

Above illustrates the Hoe Portable Color Ink Fountain designed and perfected by Hoe Engineers for use on presses not equipped with Hoe Automatic Pump System of Ink Distribution.

As is the case with portable pumps, the device is entirely self-contained and is driven from a flexible shaft which is attached to the end of the plate cylinder of the printing couple from which the fountain is to operate.

The fountain is mounted on a brace which is bolted to the press frames, and may be removed from one section to another or extra braces may be secured.

Installation of the device can be made by a machinist in a very short time and with the use of extra braces it is a very simple operation to move the device from one unit to the other. The brace may also be moved, if desired, and the use of an extra brace is not absolutely necessary.

The fountain is divided in a similar manner to the dividers in regular color fountains so that two different colors of ink may be used on adjoining pages providing, of course, the color subject matter does not come so close as to cause the two colors to intermingle because of the vibration of the cylinders, in which event it is necessary to cut grooves in the inking rollers.

The fountains have individual column control by the manipulation of adjusting screws as shown in the illustration above.

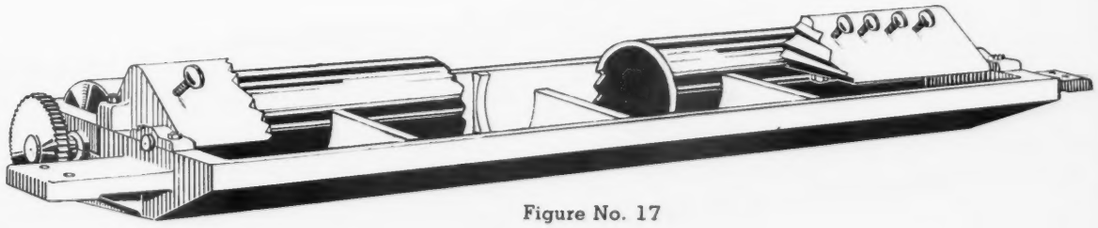

Figure No. 17

The conventional four page wide auxiliary Color Fountain illustrated here is supplied in cases where color page locations are fixed and it is not desired to change the ink in the existing fountain or ink pump. These devices are not portable since they are specially and permanently installed. The fountain may be partitioned so that different colors may be run on different pages.

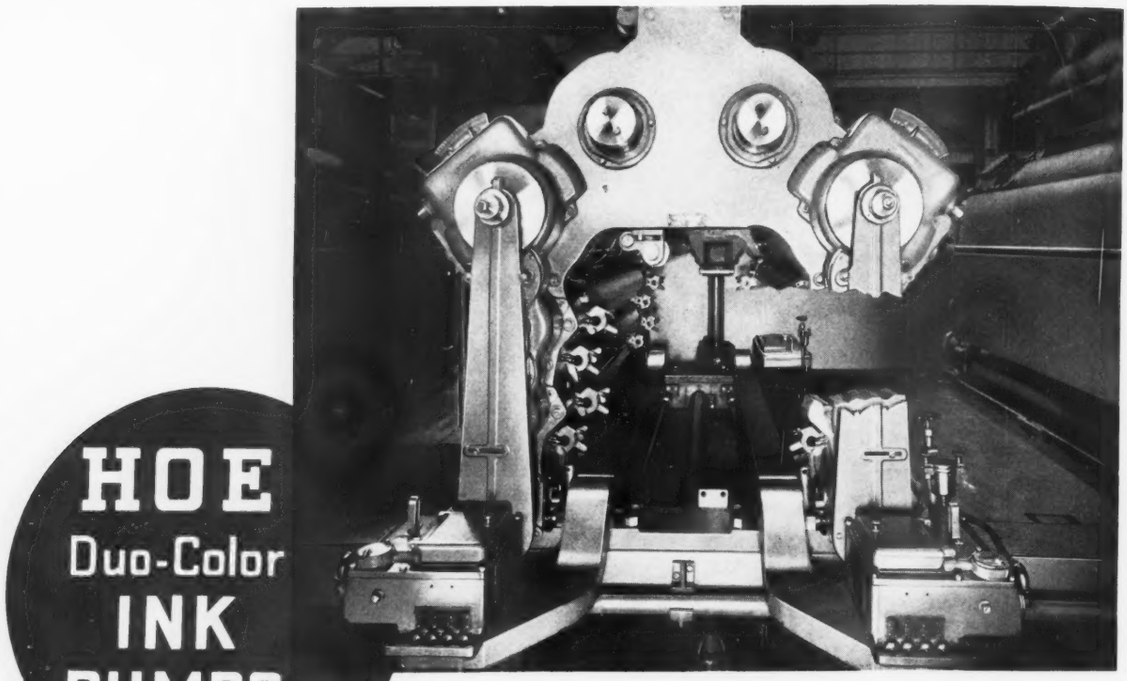

Figure No. 18

Combining such inherent advantages as safety, simplicity, accessibility, efficiency and economy, Hoe Duo-Color Ink Pumps are without equal for R. O. P. color and may be installed on existing presses, as well as new presses.

They afford absolute and complete accessibility and give positive individual column and page control with uniform ink supply in direct relation to press speed with all adjustments for color setting entirely outside of the press.

The Duo-Color Ink Pump takes up no more space than the standard black rail and differs only from the black rail in having two sets of pipes, one set piped to the regular black pump on the front side of the press and the other piped to a color pump on the rear side of the press as shown in cut-away photograph above and Figure No. 19 below.

With this arrangement, color ink may be applied the full length of the cylinder or to one half the length of the cylinder from one pump and black ink or ink of another color may be applied to the other half of the cylinder from the second pump.

With the extra set of pipes contained within the standard black ink rail and the chain driven color pump entirely outside the press, complete accessibility is maintained and since there are no complicated drives or congested mechanisms to be installed, installation is effected quickly and at a fraction of the cost of any other device for the same purpose.

While possessing all of the unequalled money and labor-saving features of the exclusive and patented Hoe Automatic Pump System of Ink Distribution and being so admirably adapted to color printing, Duo-Color Ink Pumps when specified and incorporated in new press equipment require only a fraction of the investment involved for other types of color fountains, aside from lower installation, operation and maintenance costs.

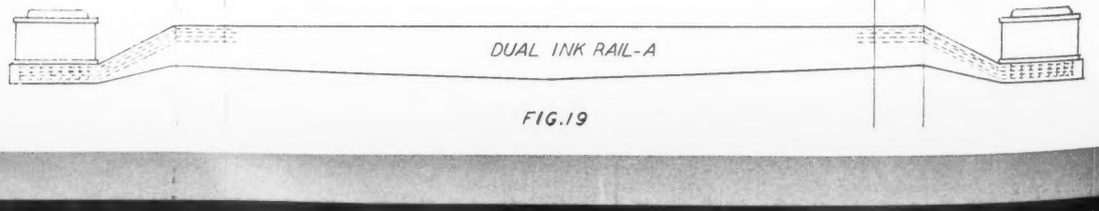

FIG.19

COLOR MAT REGISTER RACK

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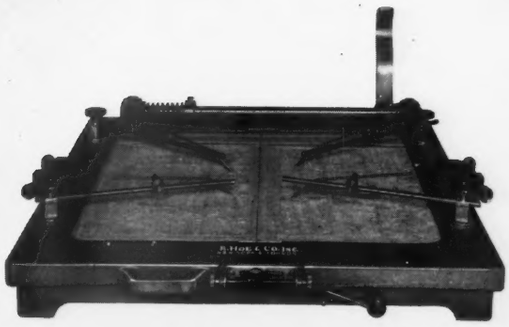


Figure No. 20

View of Hoe Register Rack which is used to position a set of stereotype dry mats for newspaper color work so that when the mats are placed in the Hoe Vacuum Casting Mold, all plates bearing parts of the design for the various colors will be cast to an exact predetermined position. After removal from the mold, each plate is shaved and trimmed in a special shaving machine. The trimming of the plate is exactly controllable in relation to the design on each plate by the means provided when marking the mat in the Register Rack.

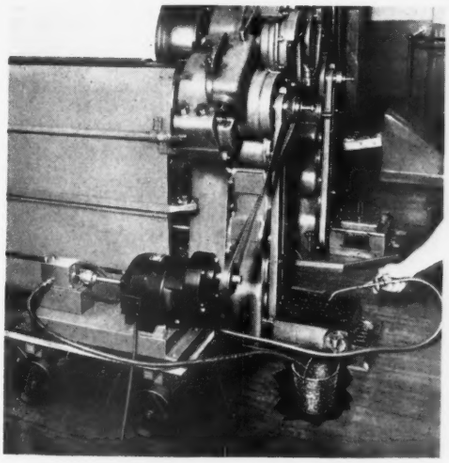


Figure No. 21

INK FOUNTAIN AND INK PUMP CLEANING DEVICES

•

In order to help the pressroom in the problem of cleaning out ink fountains and pumps when a change in the color of ink is made, we have developed several types of suitable equipments and accessories which enable reducing materially the time normally required for this work.

Figure 21 illustrates a combination device consisting of a rotary force pump with motor mounted on a portable truck complete with hose and spray gun for use in spraying the cleaning fluid into the ink pump box or the ink fountain. The motor has a double end extension shaft from which the ink pump on the press may be driven to pump the cleaning fluid through the tubes, and the drive may then be reversed for withdrawing the fluid from the tubes before filling the pump box with new ink.

Figure 22 shows a spray gun device for use with compressed air which may be used for spraying cleaning fluid into the ink pump box or fountain and an individual motor as shown in Figure 21 may be used for driving the ink pump in order to pump the cleaning fluid through the tubes and withdraw same therefrom. These cleaning devices may be used with either the auxiliary pumps or fountains or the regular ink pumps on the press.

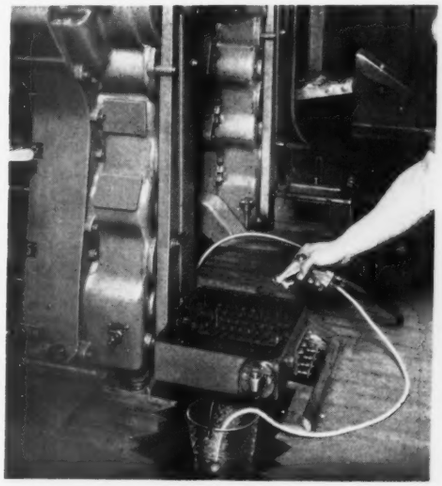
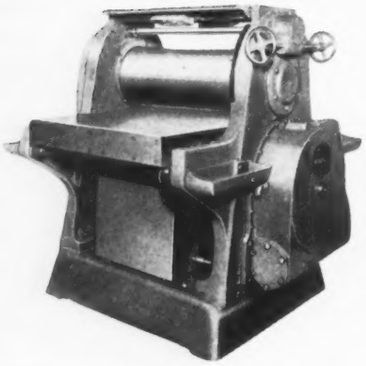


Figure No. 22

HOE PRECISION PLATE MAKING MACHINERY

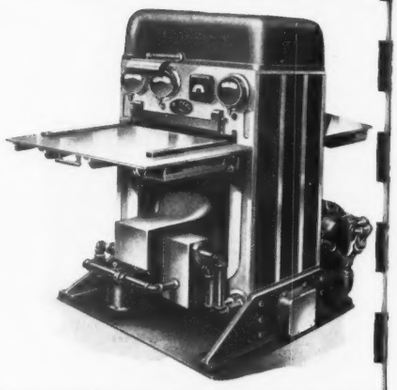


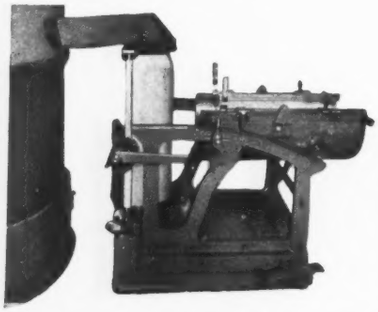
MONARCH ROLLER-BEARING MATRIX ROLLER

• Designed for the speedy production of high quality mats, it can be operated from either end and run at fast or slow speed. There are no operating levers. Control is entirely push-button electric.

DIRECT-PRESSURE MATRIX MOULDING PRESS

• Speedier mat moulding, deeper impression of engravings, more exact color register and remarkable simplicity of operation are the features of this recently introduced Hoe design.



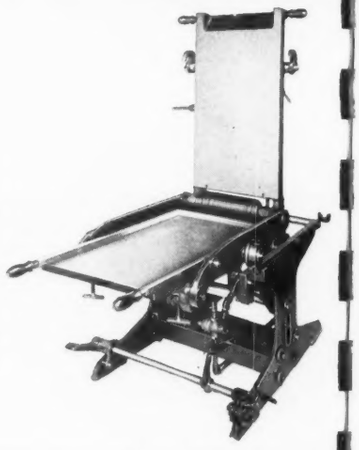


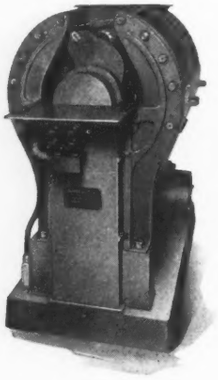
VACUUM CURVED CASTING MOULD

• This mould, arranged with vacuum in the concave section for holding the mat in its correct position, conforming it exactly to the curvature of the mould, reduces to a minimum the sinks and irregularities which so often appear in plates cast in ordinary moulds. When used with the Hoe thermostatic arrangement for automatically controlling the flow of cooling water to the cover it will give the best possible results.

VACUUM-TYPE SPEED FLAT CASTING MOULD

• This mould equipped with vacuum in the bottom holds the mat securely against the casting members producing better type faces and a more accurate plate. This mould also embodies all the "Speed" features of the Standard Hoe 5-Column and 8-Column Speed Mould.



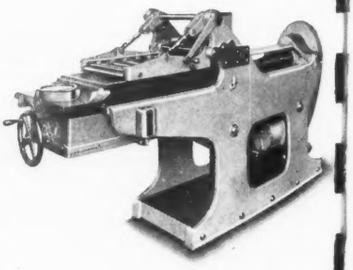


CURVED SHAVER AND CUTTING-OFF MACHINE

• A precision machine designed for the utmost operating convenience and safety. Ultra-modern design includes anti-friction bearings throughout, automatic stop and push-button control. Shaves plates rapidly to extremely close tolerance and cuts tails in one operation.

INCLINED-BED FLAT SHAVING MACHINE

• A machine built with precision to do precision work. Will shave plates as thin as .062" and full width without buckling, with an accuracy of a thousandth part of an inch. With the holding-down roller plates as small as 2 x 3" can be shaped without danger of tipping the plate.



Modern, efficient plate-making machinery offers a practical means of cutting makeready time and improving printing quality. If you are now working with older equipment, let us show you the latest features which speed up plate-making and assure an accurately finished plate and at the same time increase production. These improvements reach their highest level of efficiency in the Hoe Line.

R. HOE & COMPANY, Inc.

General Offices, 910 East 138th Street (at East River) • NEW YORK CITY •

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No. 76—Cork Underpacking

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FIRMNESS...insuring clean, sharp printing of type and pictures

COMPRESSIBILITY...to compensate for normal irregularities in plate thickness, common to all stereotype printing plates

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VULCAN

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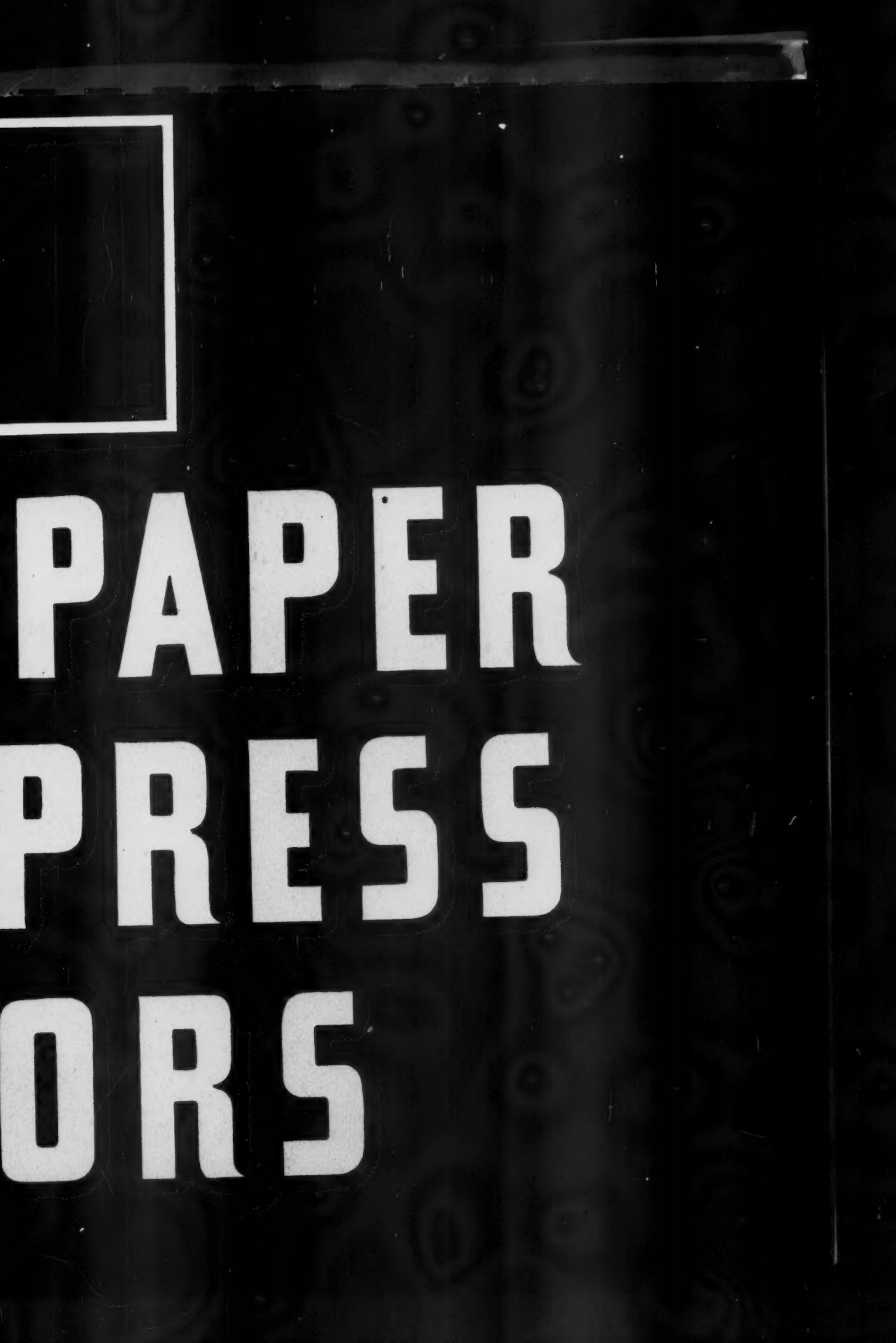
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NEWSP
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S COLORS

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BATTLE CREEK	CINCINNATI	DETROIT	LOS A
BUFFALO	CLEVELAND	INDIANAPOLIS	MILWA
			MINNE

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NSAS CITY	NEW ORLEANS	RICHMOND	SAN FRANCISCO
S ANGELES	NEW YORK	ROCHESTER	SEATTLE
LWAUKEE	PHILADELPHIA	ST. LOUIS	SYRACUSE
NNEAPOLIS			

A COMPREHENSIVE N

We have planned this News Ink Color Guide to cover
It includes inks for process printing, halftone web colors
process inks adopted by the A. N. P. A., A. A. A. A. an
which have a wide acceptance. While you may not be i
by us, we feel that the presentation of so comprehensive
of the service offered. Of course, we have been serving
years, in addition to being pioneers in the developmen
development of fine printing inks and in advanced print
some of the most competent chemists in the industry,
standards in the newspaper field. When IPI introduce
thoroughly in commercial practice before it is offered t

IPI's leadership has been amply demonstrated in its progr
Monographs on Color" exemplifies its leadership in the
seven-story building in New York, devoted to fundamen
in Chicago and elsewhere; and many laboratories and serv
to send you a copy of an interesting book, "Back of the
Printing Ink Division of Interchemical Corporation, thr
cally located throughout the United States, is in a position

NEWS INK SERVICE

ver all phases of newspaper printing with colored inks.
ors and run-of-paper colors. In addition to the standard
and A. N. A., there is an alternate selection of colors
oe in the market for all of the news ink services offered
ive a line of color inks would suggest the completeness
ng the leading newspapers with news blacks for many
nent of news web colors. IPI has been a leader in the
inting processes. Its Research Laboratories, employing
y, are continually at work perfecting higher printing
uces a new, revolutionary product, it has been tested
d to the trade.

ogram of interrelated research. The publication of "Three
he field of color. Its research facilities center around a
ental research; the Products Development Laboratories
ervice stations throughout the country. We will be glad
he Printed Word—A Story of Ink." The International
hrough the service of its twenty-nine branches strategi-
on to meet any news ink requirements on short notice.

STANDARD A.N.P.A.

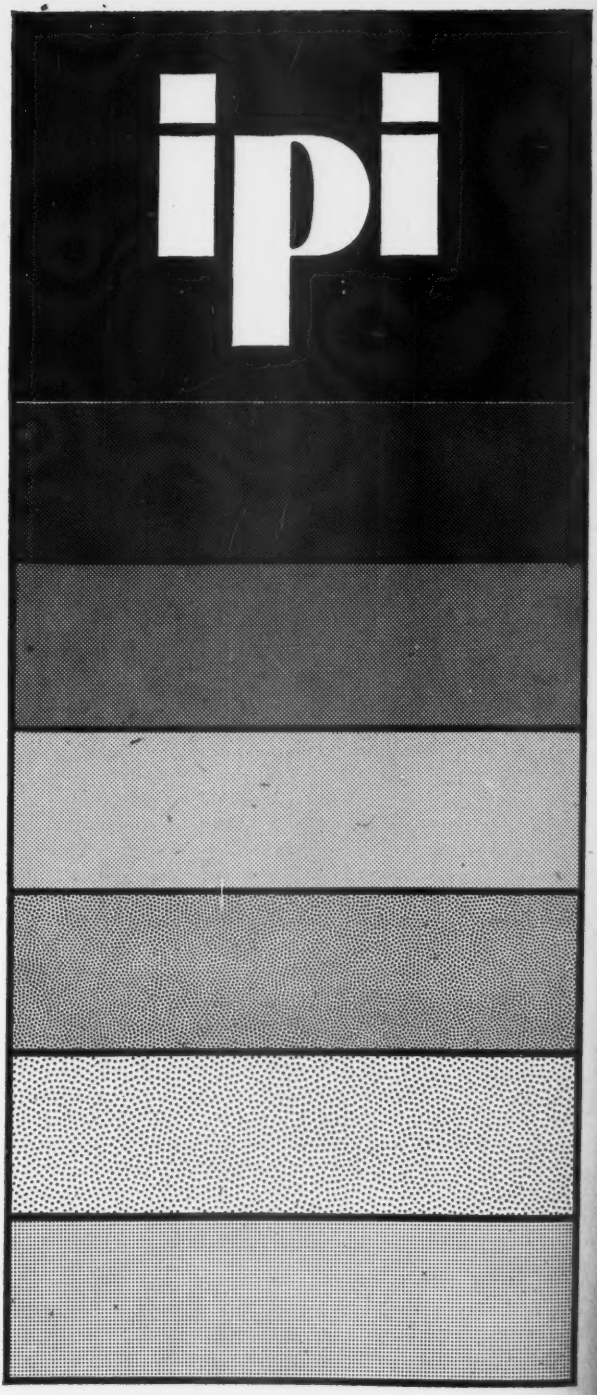
AS ADOPTED BY THE A.N.P.A., A.A.A.A.,

On these two pages are the IPI matches and formu
process inks adopted by the American Newspaper Pub
American Association of Advertising Agencies, and the
Advertisers. These standards were arrived at after many
survey of the industry's needs, and extensive research
incorporate pigments which yield the widest gamut of c
basis of spectrophotometric readings. They are the neares
primaries within the limitation of newspaper printi
wide range of subjects, they will produce the best aver
in four-color process work. Special cases will requir
standards, and on the two pages following you will find

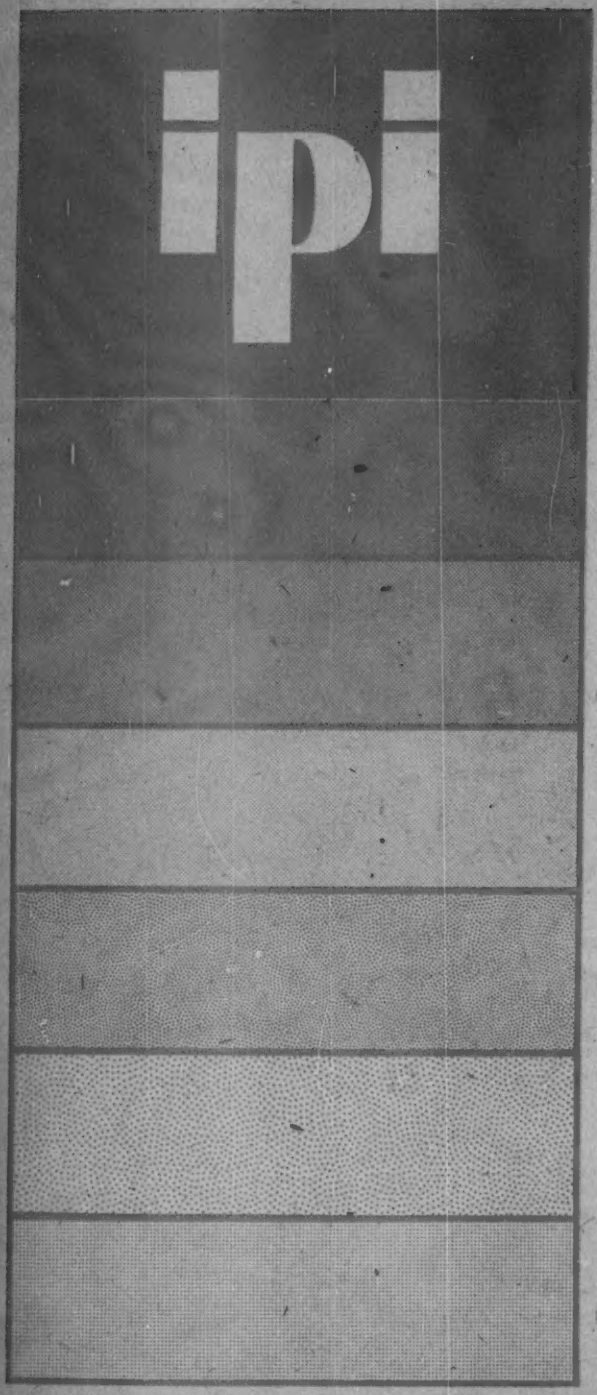
COLORS

A., AND A. N. A.

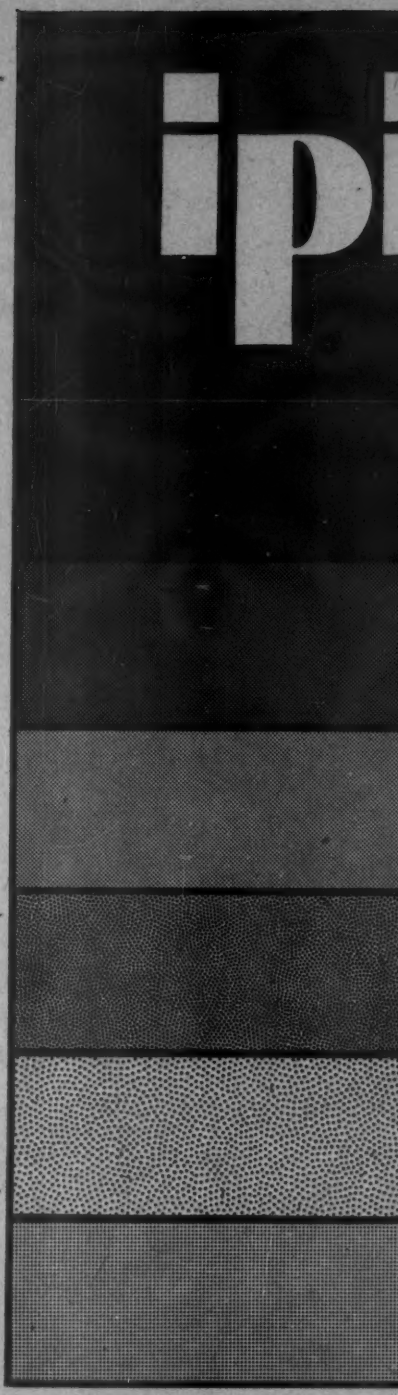
mulations for the standard
Publishers' Association, the
the Association of National
ny conferences, a thorough
rch. These standard colors,
of colors in mixtures, on the
arest to the ideal subtractive
nting techniques. Over a
average color reproduction
quire adjustments of these
nd alternate process colors.



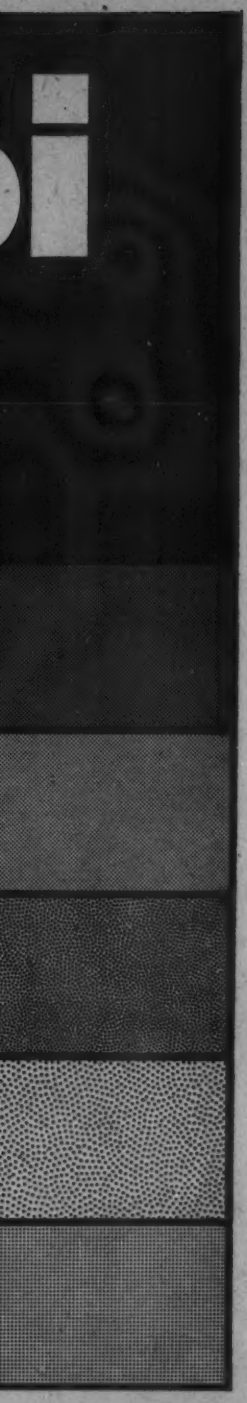
A.N.P.A. BLACK—10



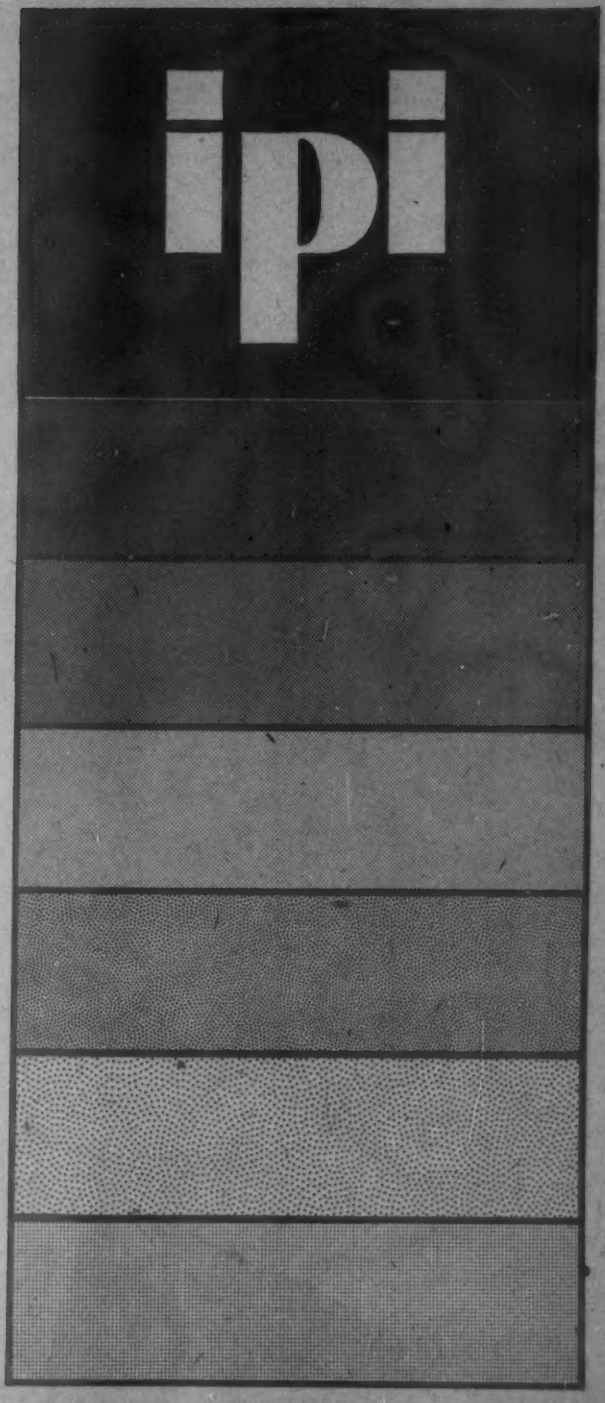
A.N.P.A. YELLOW—60



A.N.P.



N.P.A. RED—80



A.N.P.A. BLUE—40

ALTERNATE PROCESS COLORS

SUPPLEMENTING STANDARD A.N.P.A. COLORS

ALTERNATE PROCESS

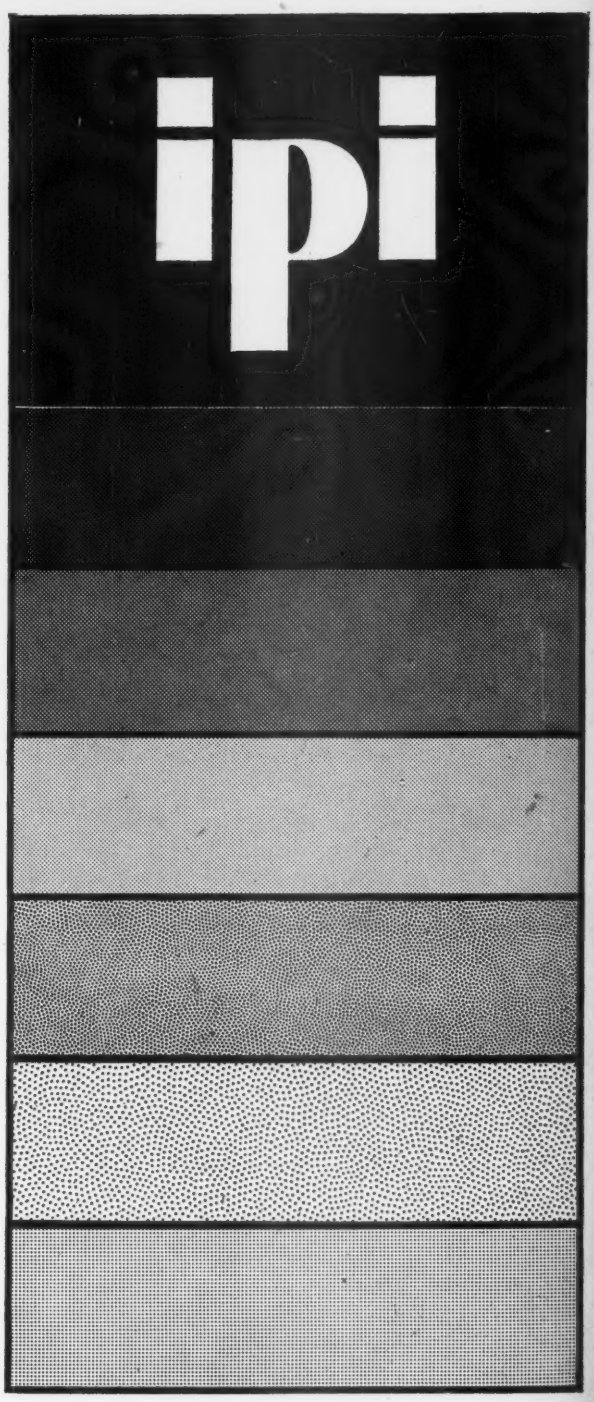
SUPPLEMENTING STANDARD A. N. P. A.

Certain special kinds of copy will require special process reproduction. As we have noted in the previ A. N. P. A. colors will yield the best average results. special cases requiring special treatment. As an indicati the alternates shown on these pages represent a yellow blue of redder shade, and a red of a yellower shade t rally, the adjustments can be made in either direction to Certain advertising pages present special problems in th which will require accurate adjustment of the inks. I experience and background in colorimetry, is in an to render this kind of service. It was the first com employ the Recording Spectrophotometer, invented Hardy, who is a consultant on the staff of our Researc

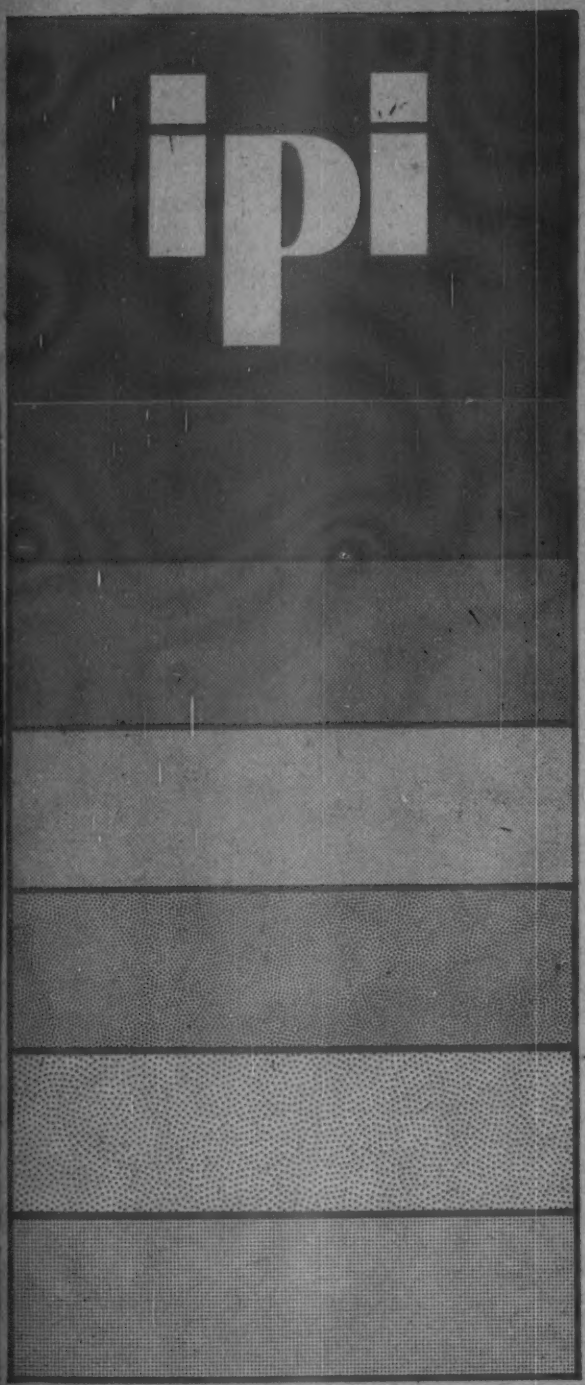
S COLORS

. A. COLORS

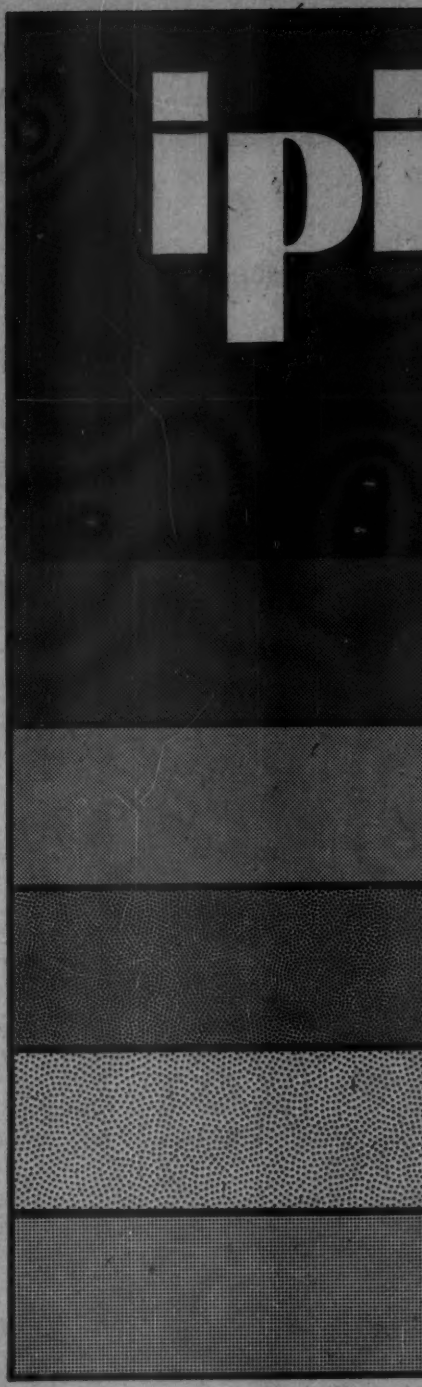
al ink matching for news
evious section, the standard
ts. There will, however, be
cation of such special colors,
low with a reddish shade, a
le than the standard. Natu-
n to fit the needs of the copy.
n the colors of the packages,
s. IPI, because of its wide
an advantageous position
ommercial organization to
ed by Professor Arthur C.
arch Laboratories.



NEWSPRINT BLACK—11



NEWSPRINT YELLOW—61



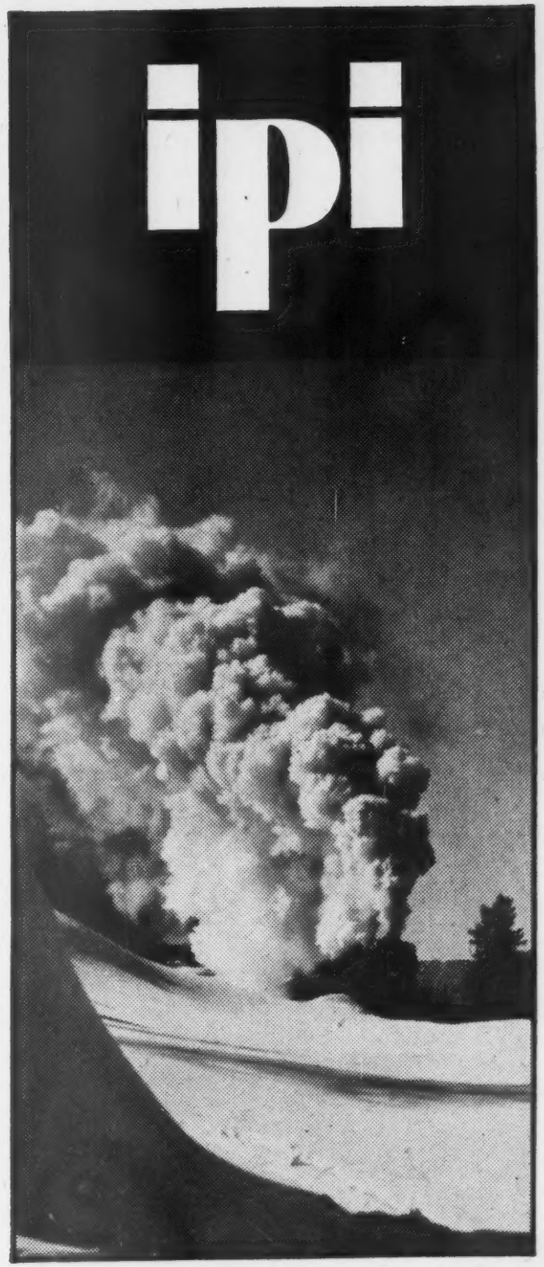
NEWSPRINT

RINT RED—81

NEWSPRINT BLUE—41

NEWSPRINT BROWN NO. 2—21

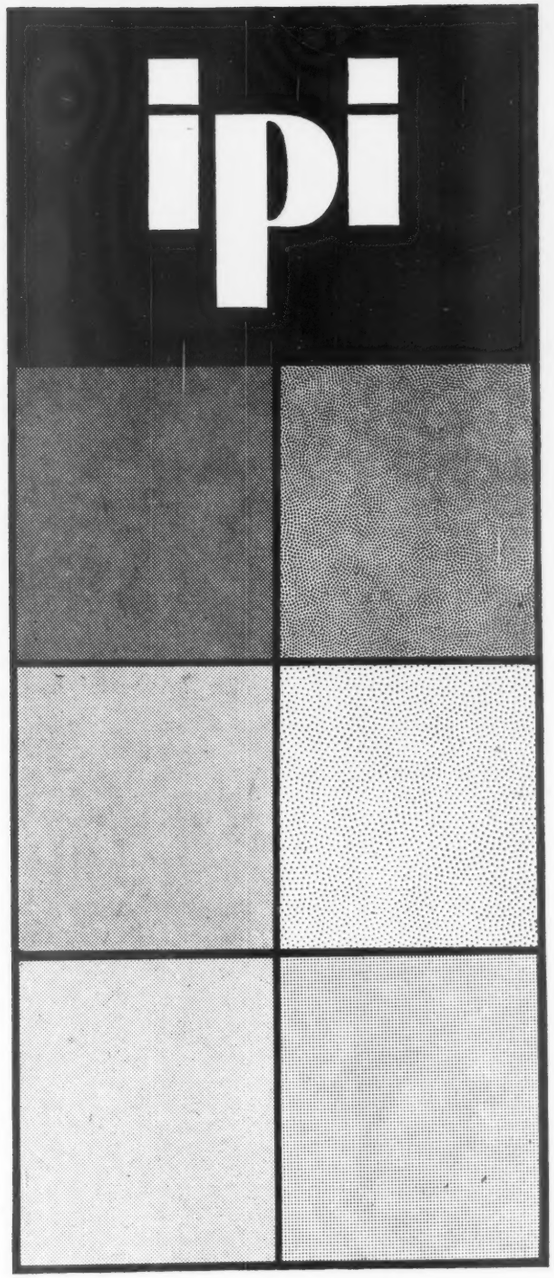
NEWSPRINT BLUE NO. 2—43



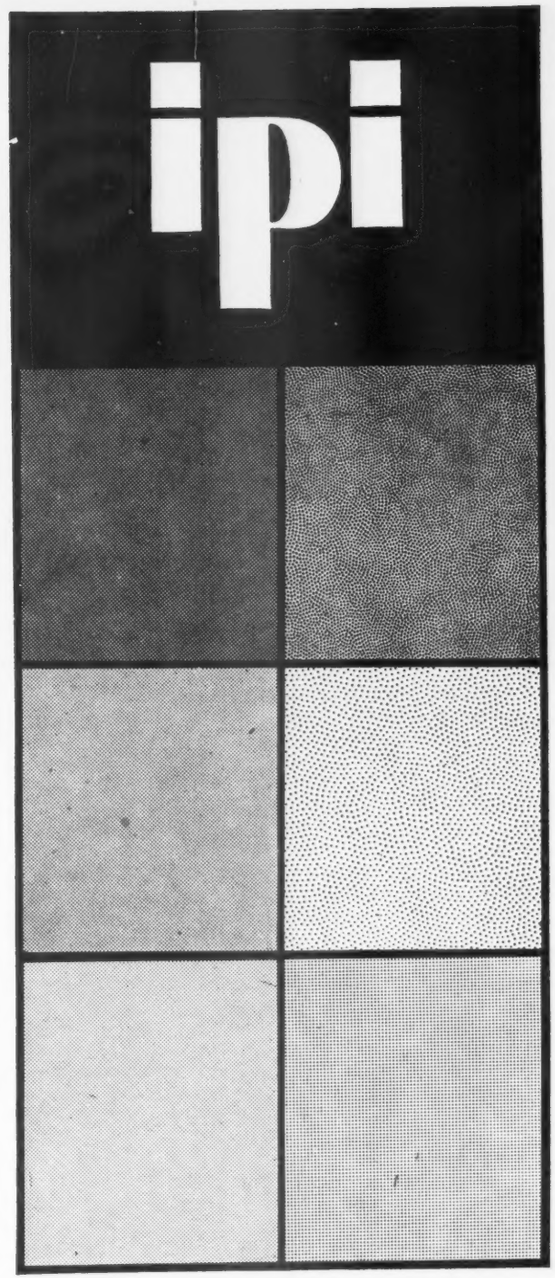
NEWSPRINT GREEN NO. 2—51

RUN OF PAPER COLORS

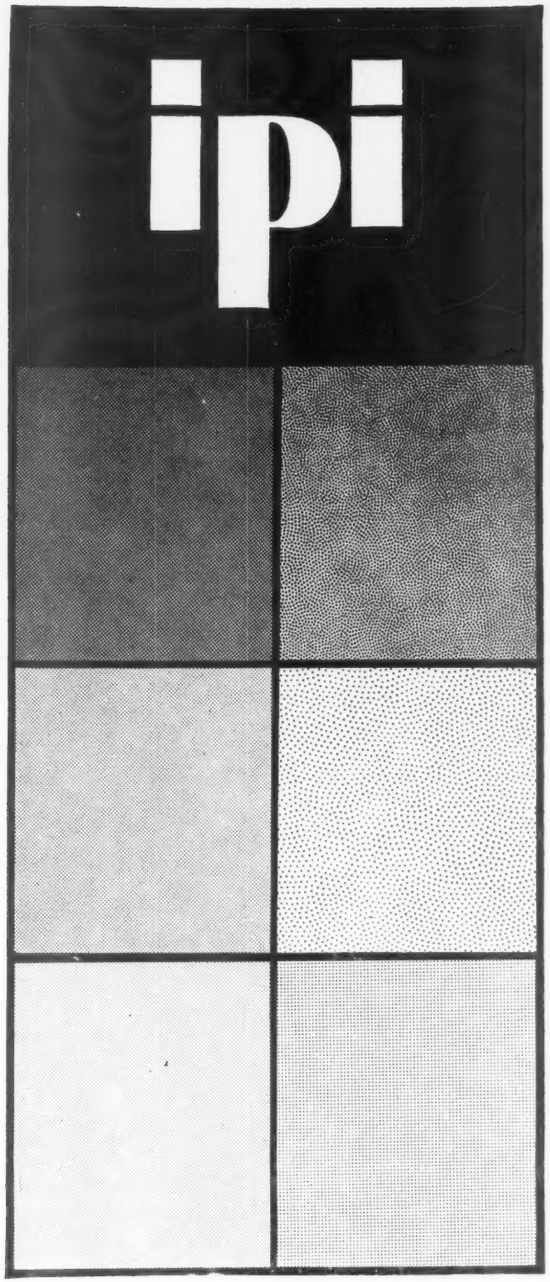
There has been a tremendous increase in the use of one or more additional colors in newspaper printing, especially in the advertising section. In many cases this color is used in a decorative manner to enhance the attention value and advertising effectiveness of a page. News stories, editorial and fashion features frequently are given a striking and pleasing effect by the addition of color. In the following section of this book a selection of the most popular colors is shown. Careful attention has been paid to the range of colors covering all practical uses. Special colors can always be made, but this selection represents the result of wide experience in formulation and in the use of the colors shown.



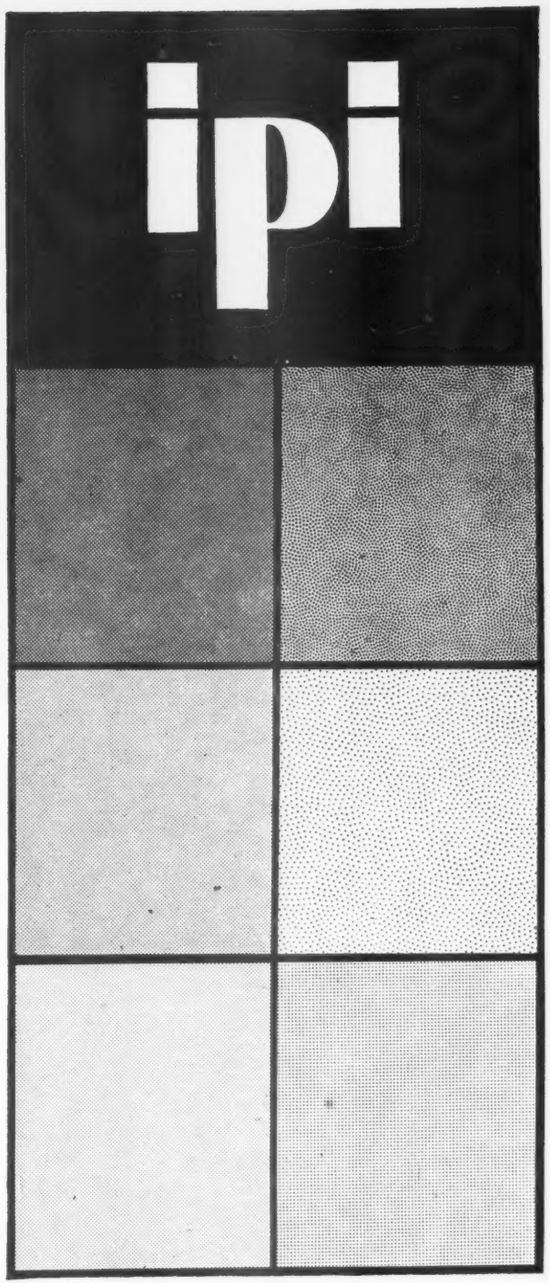
NEWSPRINT MEDIUM RED—82



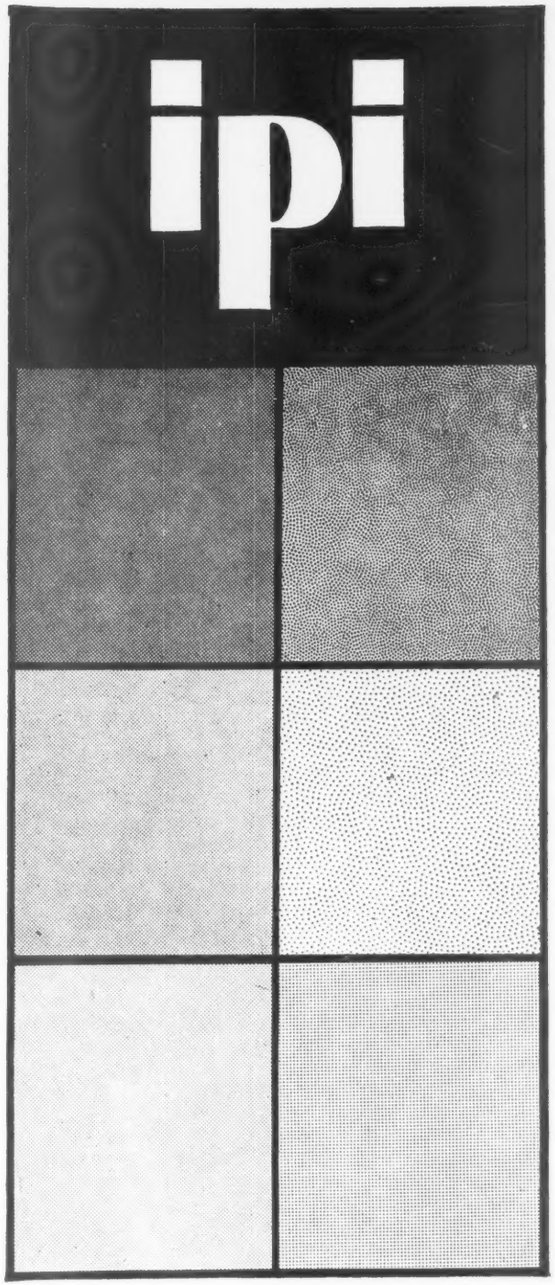
NEWSPRINT FIRE RED—83



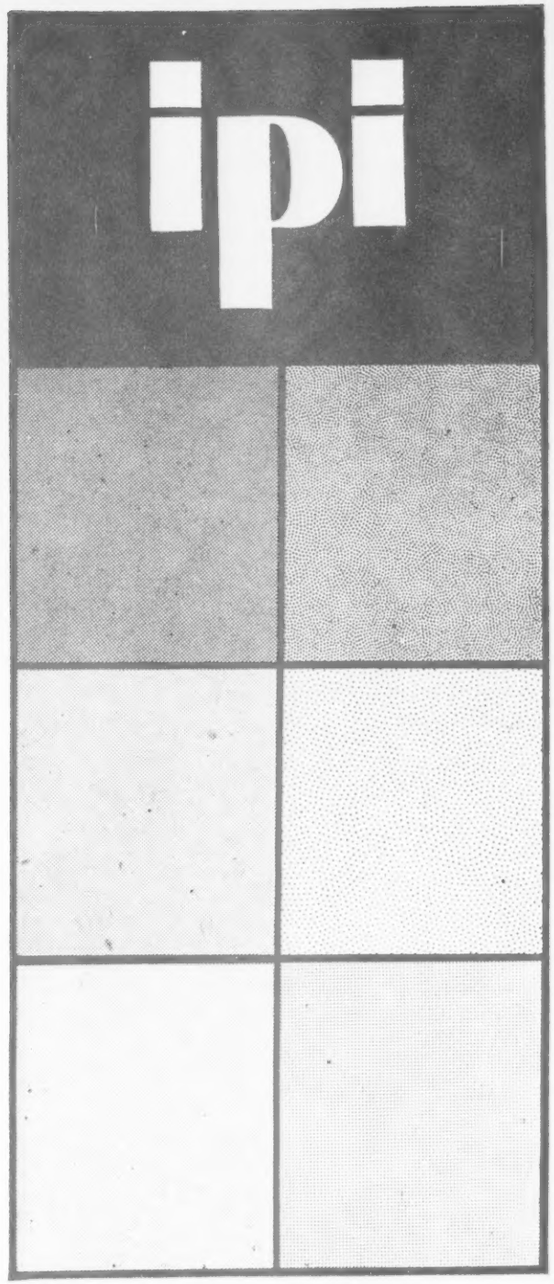
NEWSPRINT TOWER RED—84



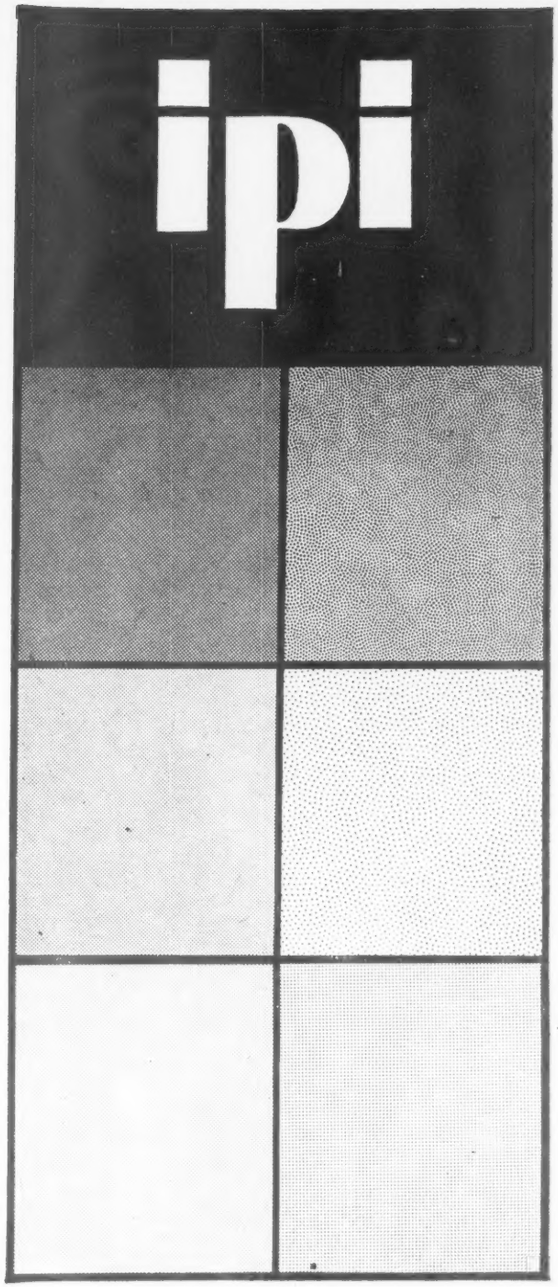
NEWSPRINT BRIGHT RED—85



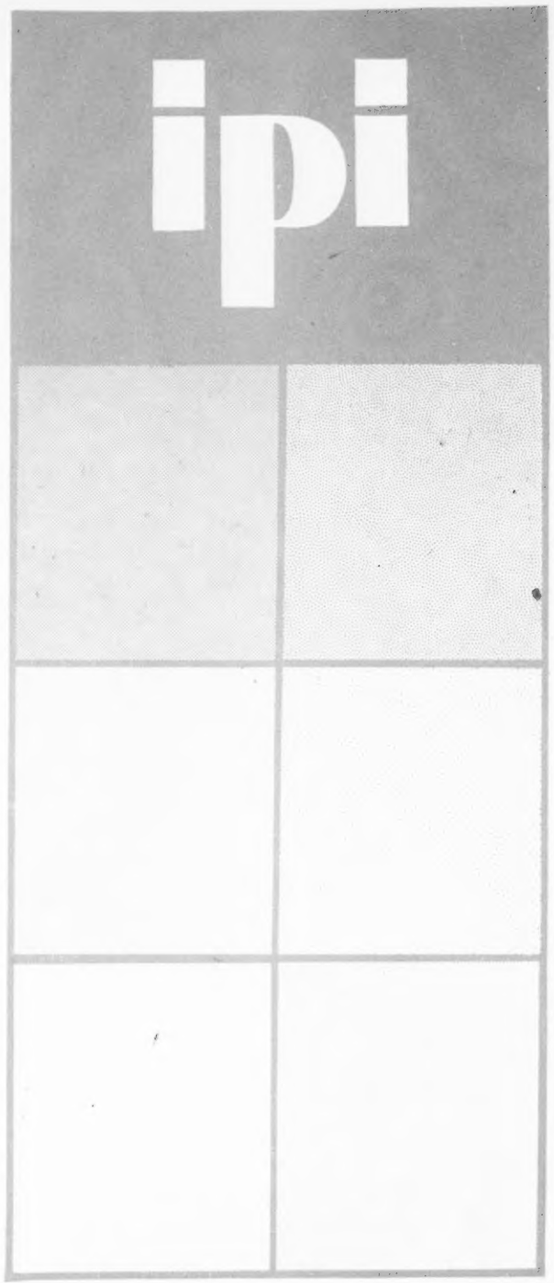
NEWSPRINT ORANGE—70



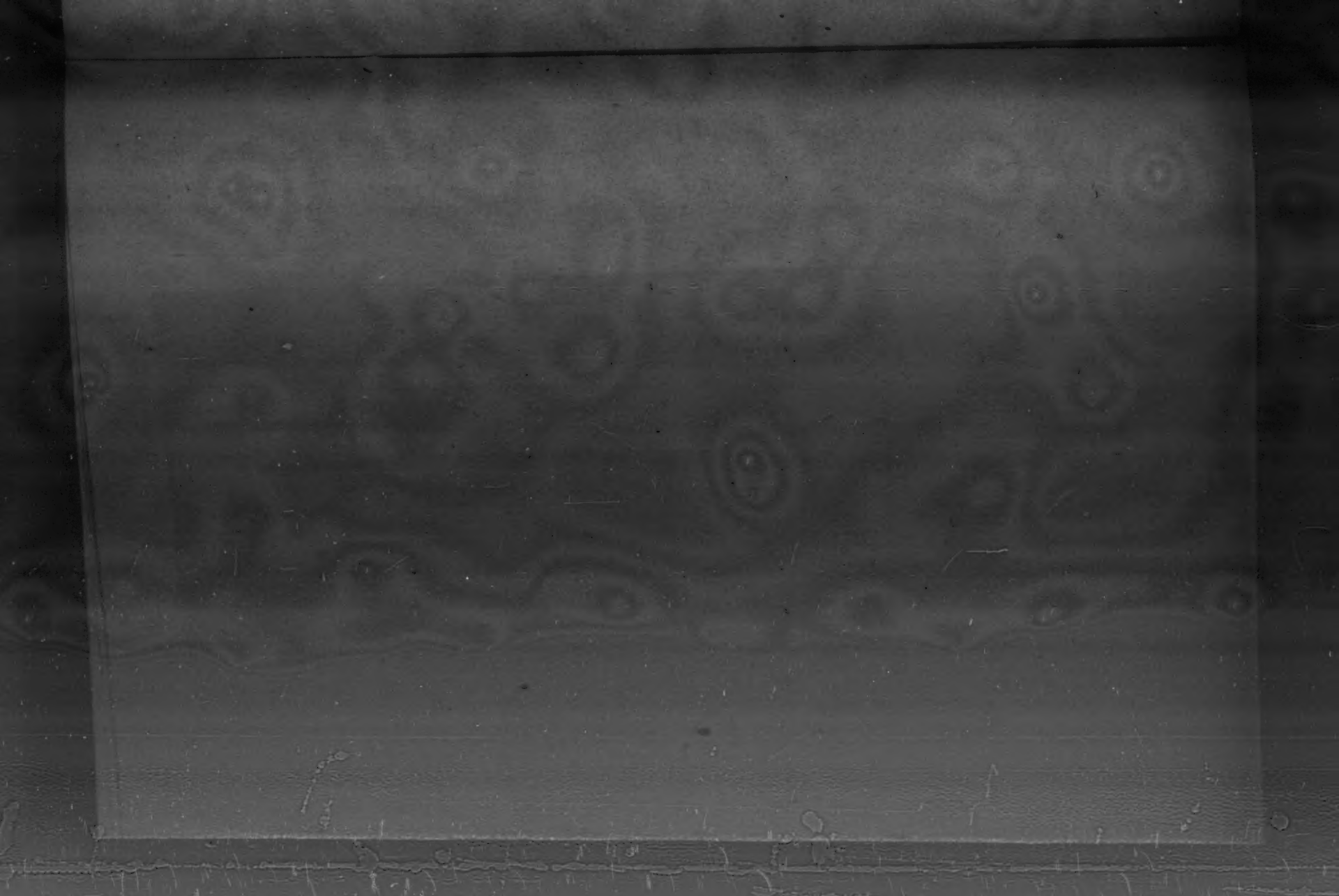
NEWSPRINT GOLDEN ORANGE—71

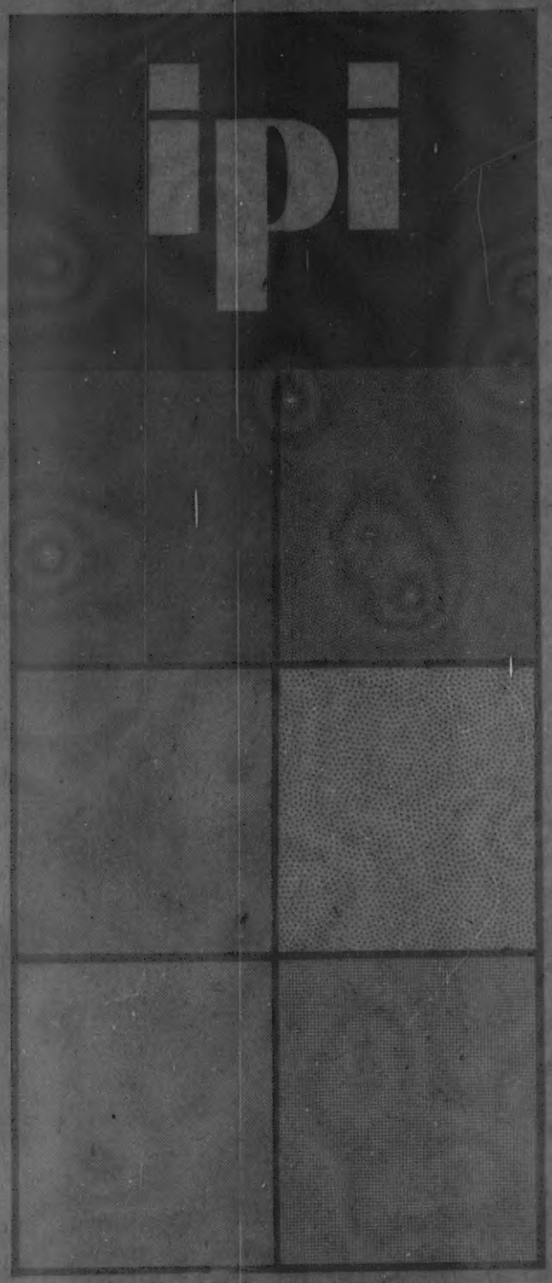


NEWSPRINT BRIGHT ORANGE—72



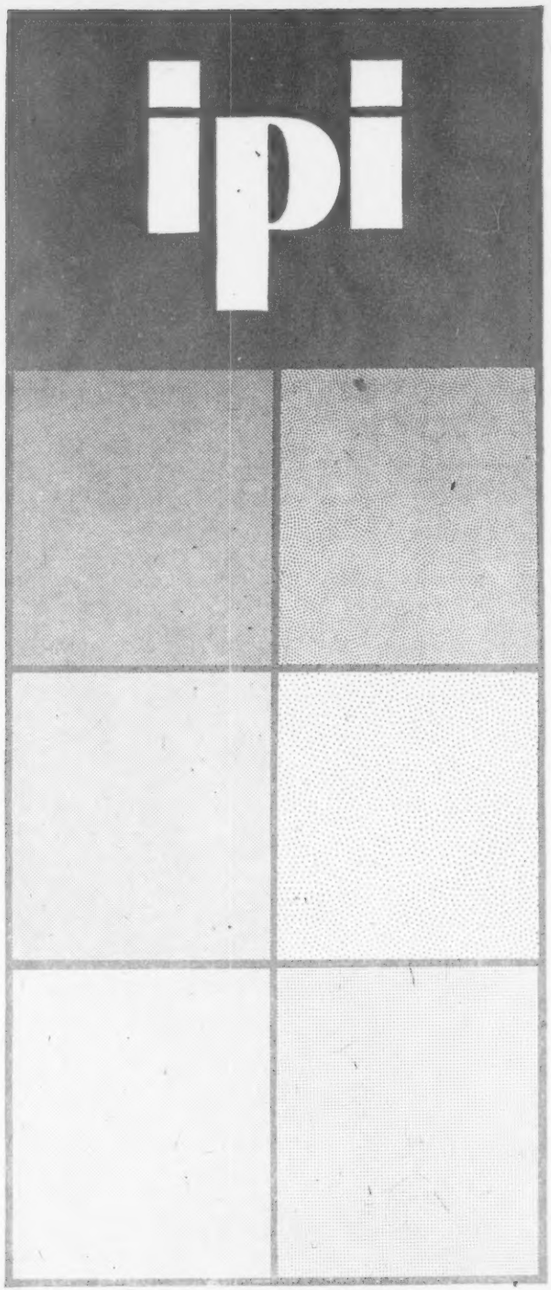
NEWSPRINT CHROME YELLOW—62



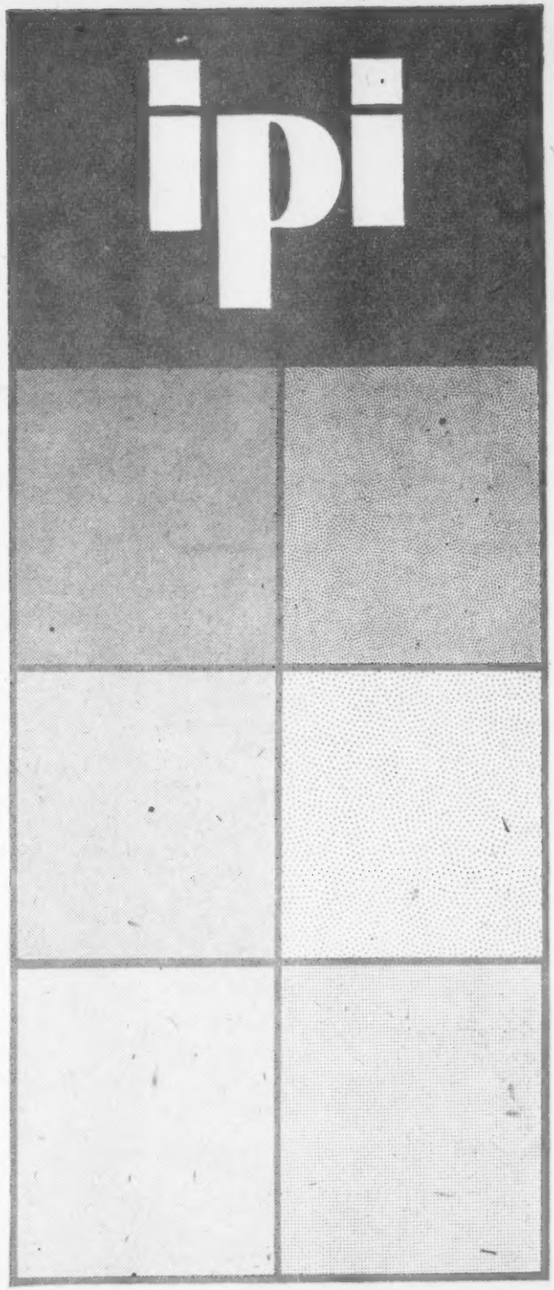


NEWSPRINT LIGHT YELLOW—63

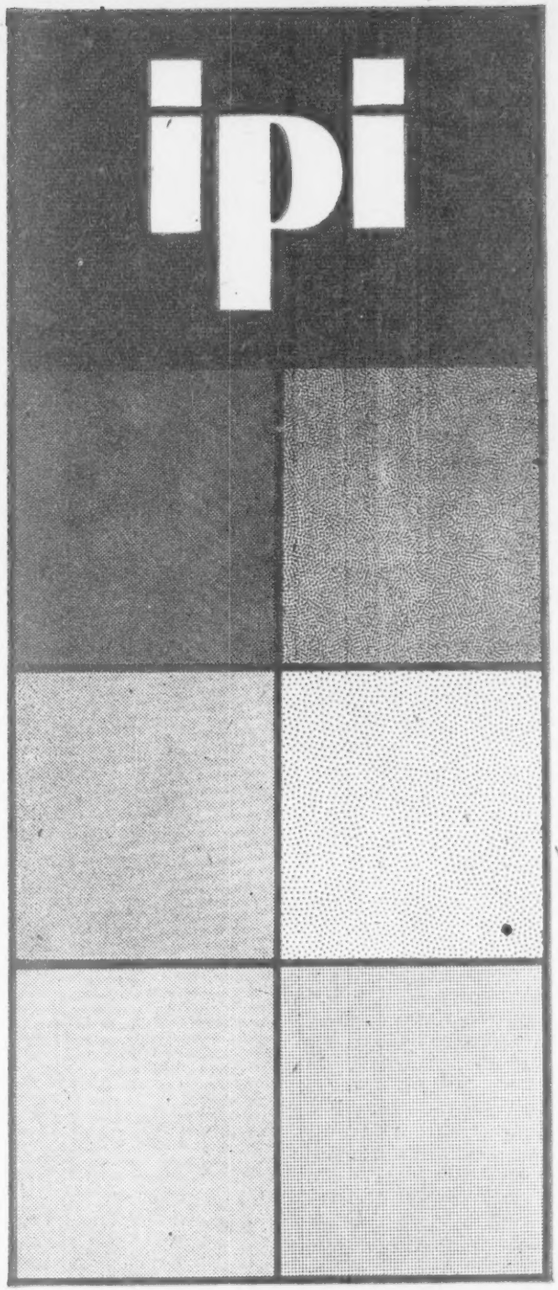
NEWSPRINT PRIMROSE YELLOW—64



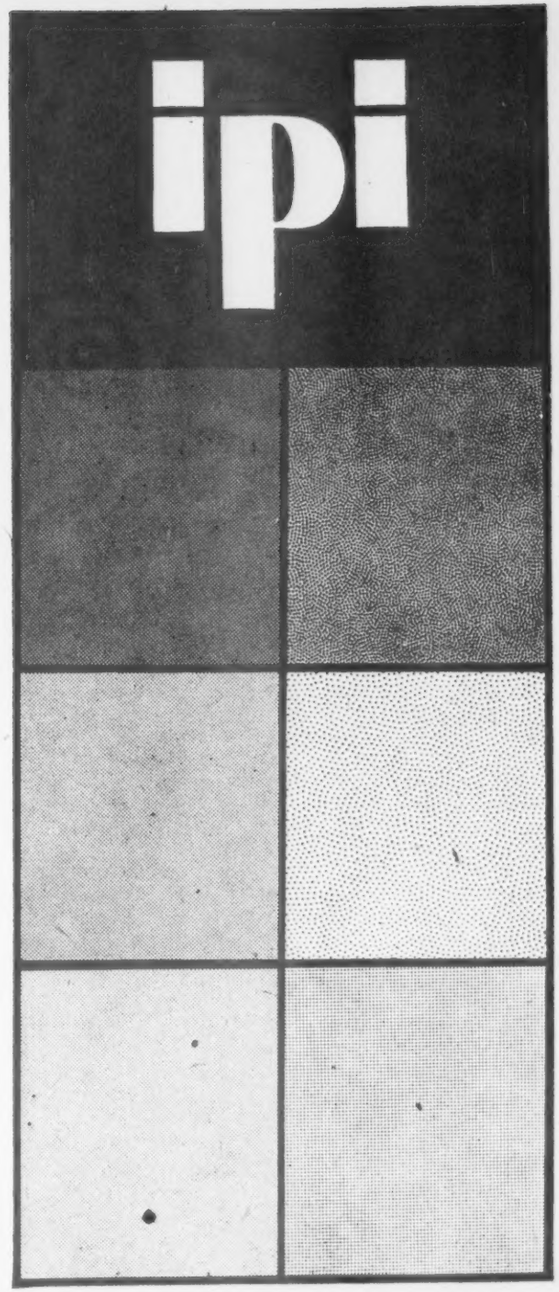
NEWSPRINT SPRING GREEN—52



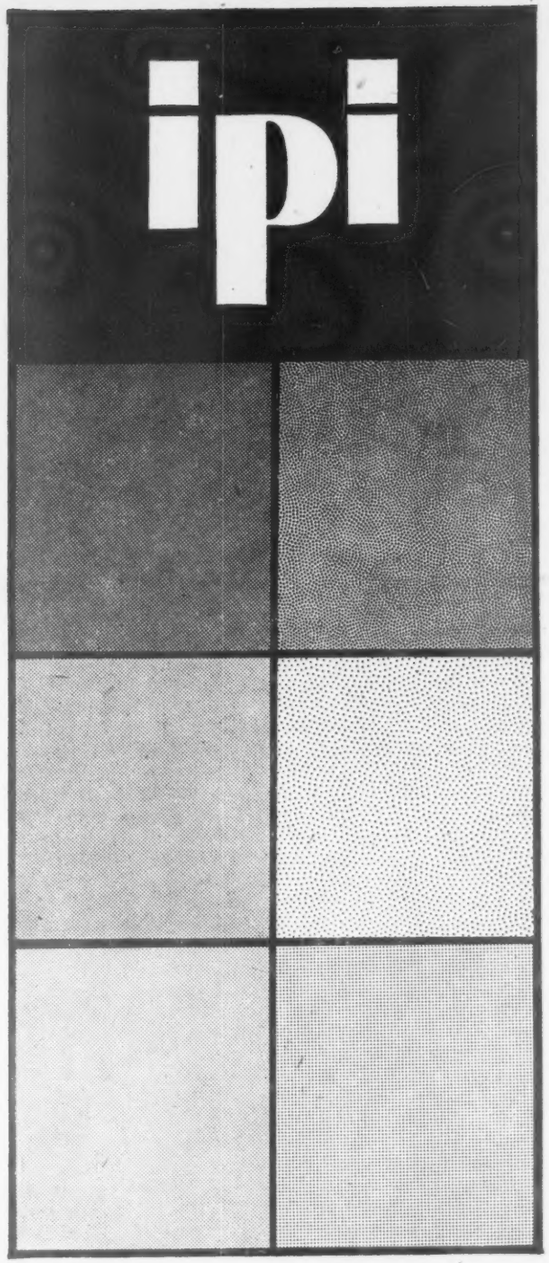
NEWSPRINT LT. PEACOCK BLUE—44



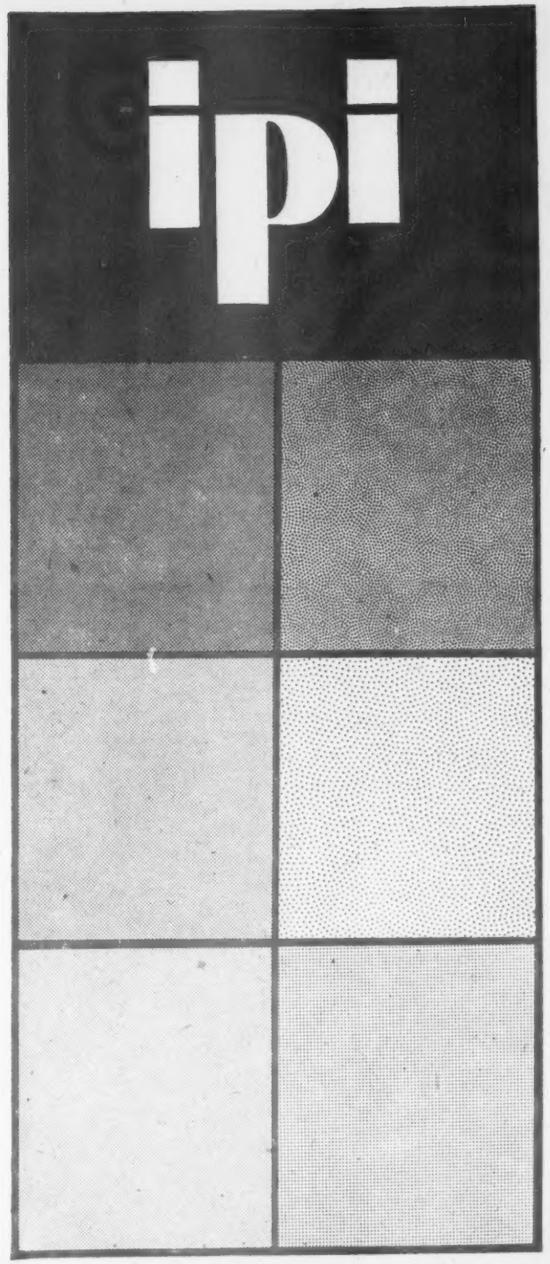
NEWSPRINT PEACOCK BLUE—45



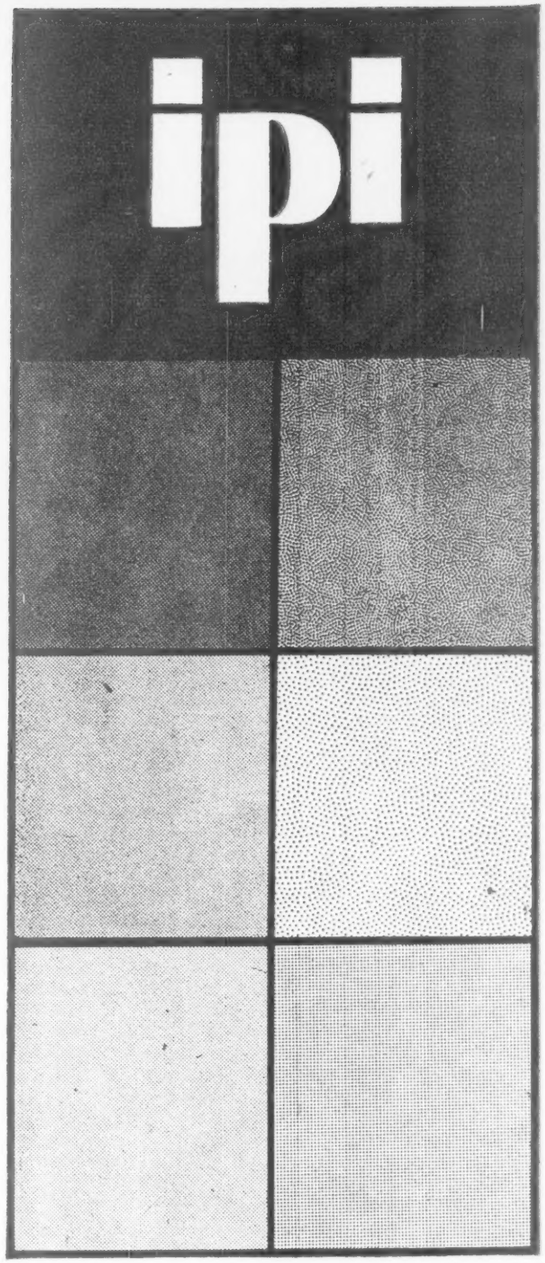
NEWSPRINT LIGHT BLUE—46



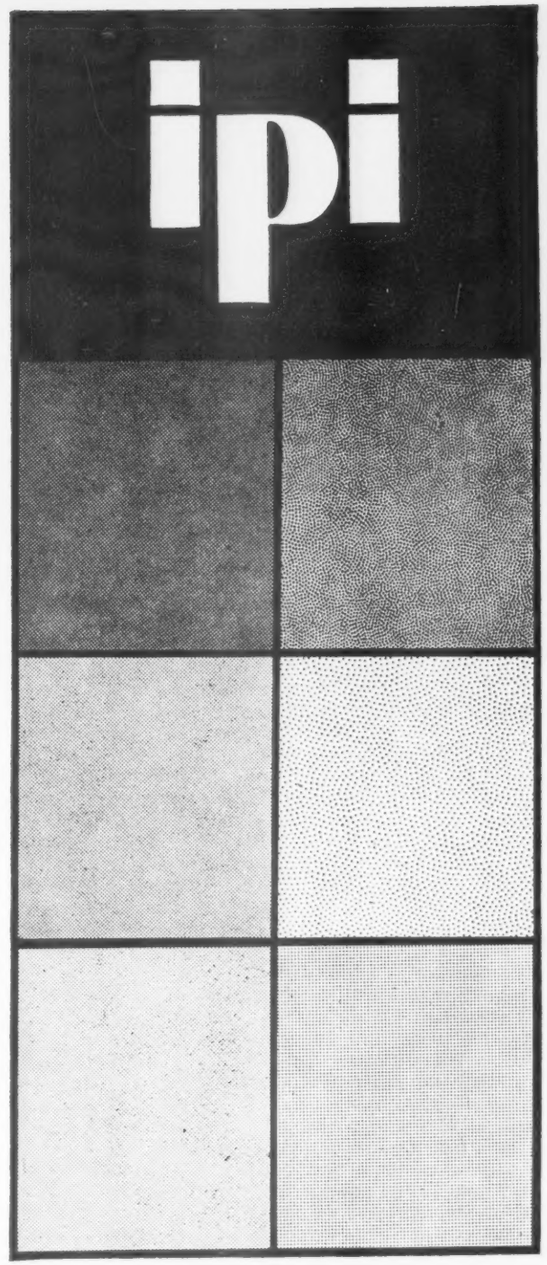
NEWSPRINT DARK BLUE—47



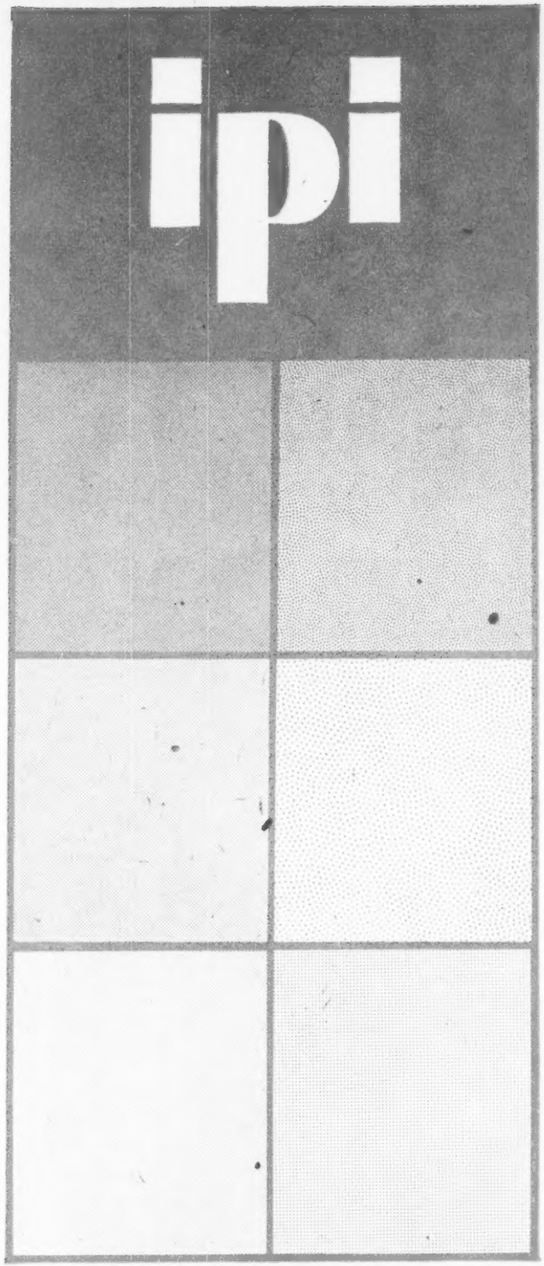
NEWSPRINT CHAP BLUE—48



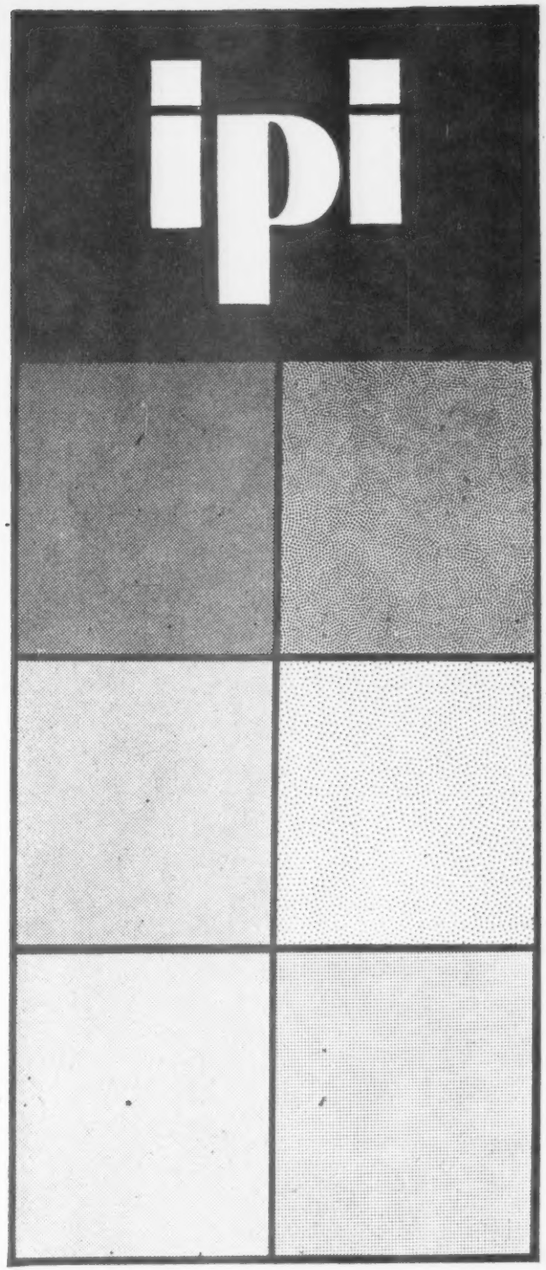
NEWSPRINT BLUE—49



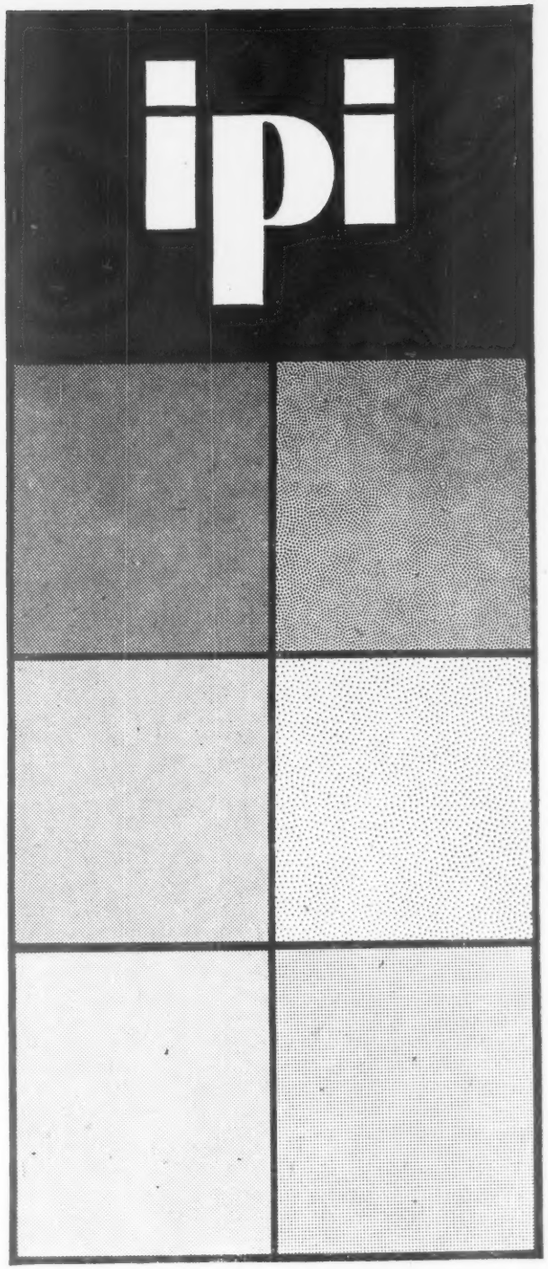
NEWSPRINT PURPLE—30



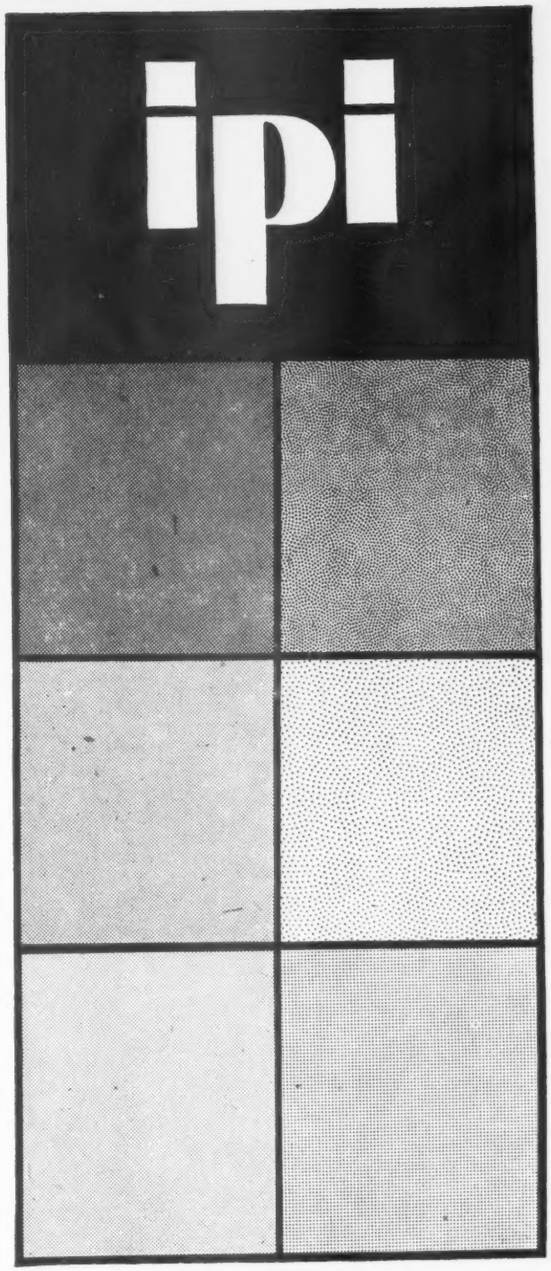
NEWSPRINT EASTER PURPLE—31



NEWSPRINT PURPLE—32

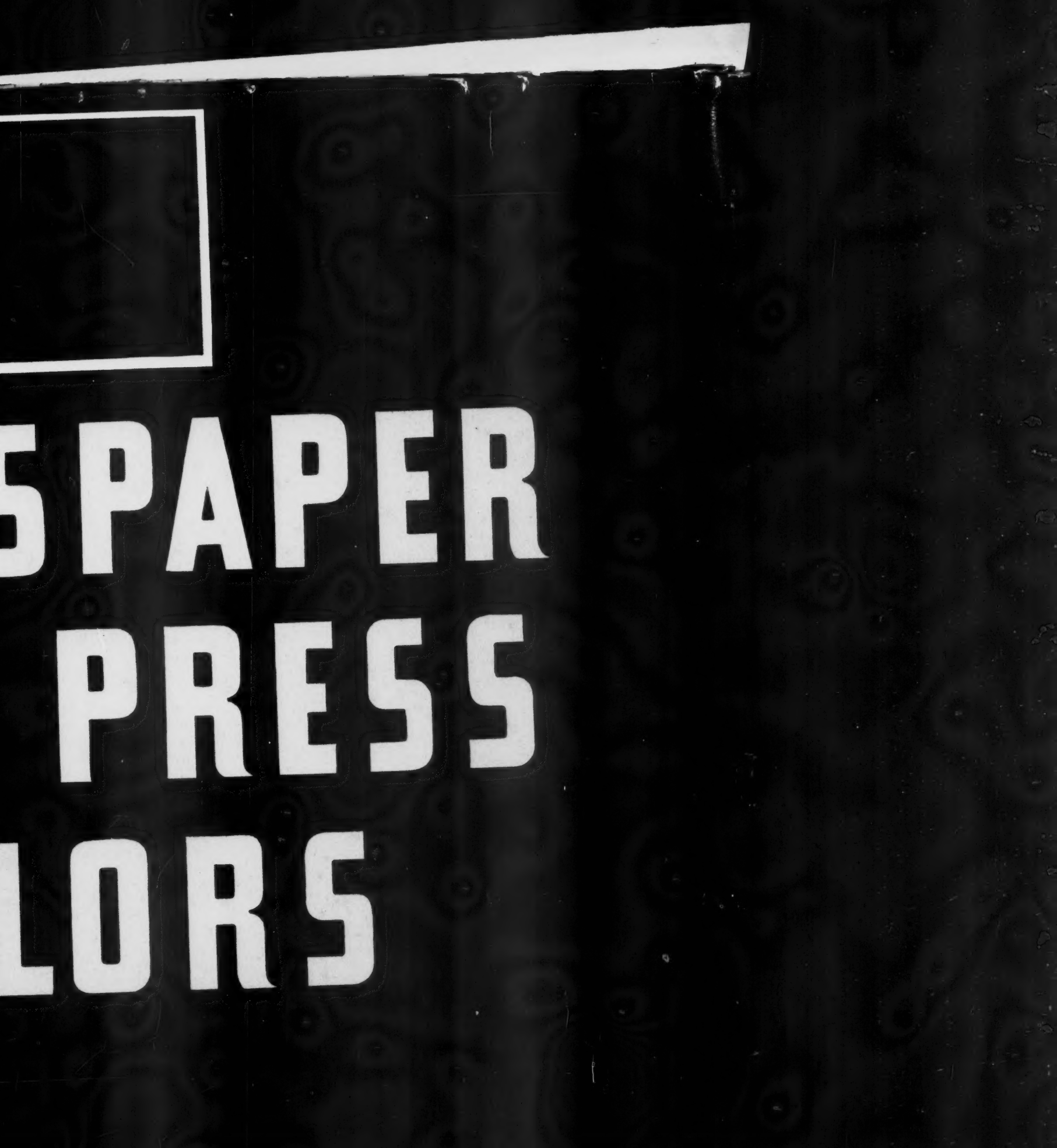


NEWSPRINT DARK RED—86



NEWSPRINT BROWN—22

NEWS
WEB
COL

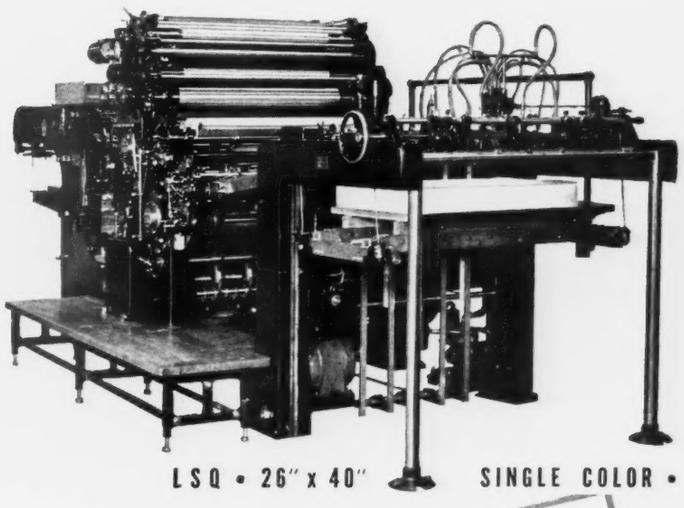

SPAPER
PRESS
LORS

ADDING

OFFSET

TO YOUR PRESSROOM

will Increase Your Market



LSQ • 26″ x 40″ SINGLE COLOR •

● The addition of Offset to your printing methods is a definite step toward expanding your market because today's market recognizes the advantages of Offset.

In choosing Harris, you set your standard of production as high as Offset craftsmanship can provide. With Harris, you adopt Offset at its best; you install equipment made by the pioneer builders of successful Offset Presses.

HARRIS LITHO CHEMICALS

Through research, Harris has developed and standardized new chemicals for both deep etch and surface plate making processes. Full details upon request. Write us with reference to your lithographic problems.

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We Too, Are Pleased

Each year manufacturers of newspaper equipment and supplies await with interest the awarding of the F. Wayland Ayer cup, highest recognition for excellence in typographic make-up and press work. They like to feel that their products have helped the winner to win.

And so this year we of the New England Newspaper Supply Company are greatly pleased that the New York *Herald-Tribune* has won the cup and that the Richmond *Times-Dispatch* has received first honorable mention. Both of these excellent newspapers are users of New England Newspaper Supply Company's blankets. Especially significant is the fact that the New York *Herald-Tribune* with its 100 years of experience uses the New England Blankets, which is no mean recommendation.

So why not get in line with the leaders, for after all, quality is the only thing that counts, and quality can be gotten only by the use of the New England Newspaper Supply Company's products. Only through their dependability and many years of experience in the manufacture of cylinder packing can quality results be obtained, so why not buy from those who know.

Your own selections may be made from any of the following, and no mistake will be made.

Plain Repressed Felt	**Brown Rubber**
High Speed Automatic Felt	**Red Rubber**
Stippled Automatic Felt	**Automatic Tympans**
De Luxe Monocork	**Stipple Faced Tympans**
Oil Proof Faced Rubber	**Gold Cloth**

These can be furnished in almost any gauge.

Known, used and sold all over the world.

Use originals, not imitations.

NEW ENGLAND NEWSPAPER SUPPLY COMPANY

164 Fremont Street, Worcester, Mass.

BRANCHES:

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CHICAGO	**Daily News Building**
PORTLAND	**314 Oregonian Building**
SAN FRANCISCO	**321 De Young Building**

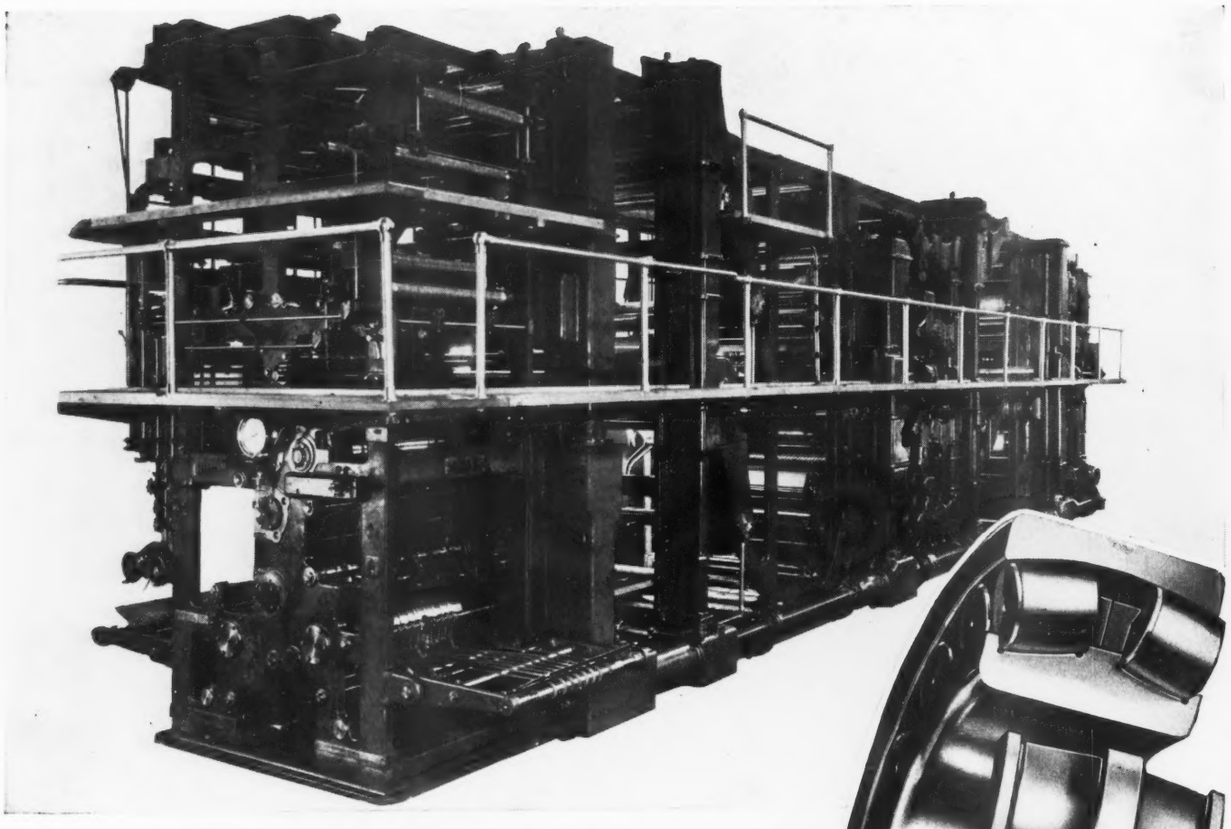
Sound, scientific facts
explain the outstanding excellence of Arrowhead Black and Colors

Skilled scientists and practical pressmen have long labored side by side to achieve better appearance and press performance.

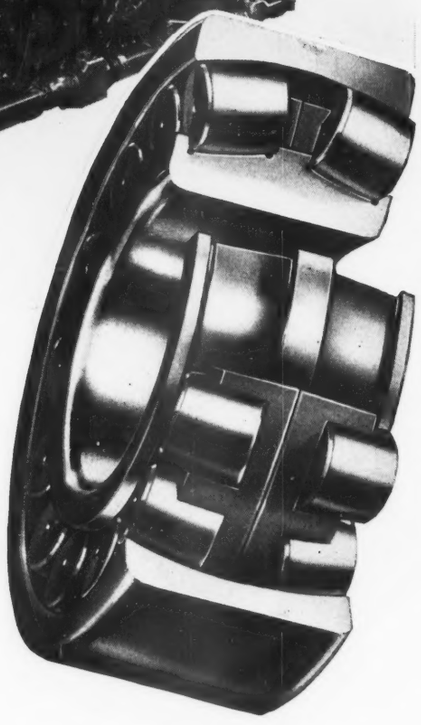
Let us demonstrate in your own pressroom

Howard Flint Ink Company

Detroit • Houston • New Orleans • Chicago • Denver
Atlanta • Cleveland • Indianapolis



64-page, two-web, high-speed, two-color magazine press BUILT BY THE GOSS PRINTING PRESS CO. *All* SKF *Bearings on it are subjected to automatic lubrication, the* SKF *Sphericals on plate and impression cylinders being made to especially accurate tolerances.*



Goss Presses

KEEP FRICTION AWAY WITH SKF

Outwitting Friction on the rotating parts of this 64-page High Speed Press as they turn at high speeds was a simple matter for Goss engineers. They merely installed about 500 SKF Bearings—and Friction was definitely OUT. In its place are the extremely high accuracy, self-alignment, low friction and minimum lubrication requirements of SKF Bearings . . . combined with accurate register and impressions, low starting torque, quick pick-up, high speeds and low costs—a tribute to the good judgment of Goss engineers.

SKF INDUSTRIES, INC., PHILA., PA.

4820

ROLLER SKF BEARINGS

THE CHALLENGE MACHINERY CO.

Main Office and Factory:
GRAND HAVEN, MICHIGAN

Challenge

Eastern Sales Office:
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CHALLENGE PAPER DRILLS

A size and style for every requirement. Seven models—Hand-Power Style M . . . Foot-Power Styles MF, E and EK . . . Electro-Hydraulic EH, EKH and GH. Production ranges from 200,000 to 600,000 holes per hour, depending on the kind of work and model used. All models are available with slotting and cornering facilities and have the Challenge Automatic Trip Gage, which allows the operator to keep both hands on the stock until all holes are drilled. A Fully Automatic Gage, electrically operated, is available at extra cost. Challenge Paper Drills are fast and accurate in operation—engineered to do their work efficiently, easily, and economically. Write for special catalog that illustrates and describes the complete line of Challenge Paper Drills; also ask for specific information and prices on the model that fits your particular requirements. No obligation.

FULL LINE—PRINTING MACHINERY AND EQUIPMENT —Lee Presses . . . Challenge Proof Presses . . . Hi-Speed Quoins and Keys . . . Challenge Galleys and Cabinets . . . Challenge Iron Furniture . . . Challenge Plate-Mounting Equipment . . . Challenge Semi-Steel Imposing Surfaces . . . Challenge Routers and Type-High Units . . . Challenge-Sieber Punches, etc.

Write for specific data and prices on any item in the Challenge line of standard or special printing machinery and equipment. 392

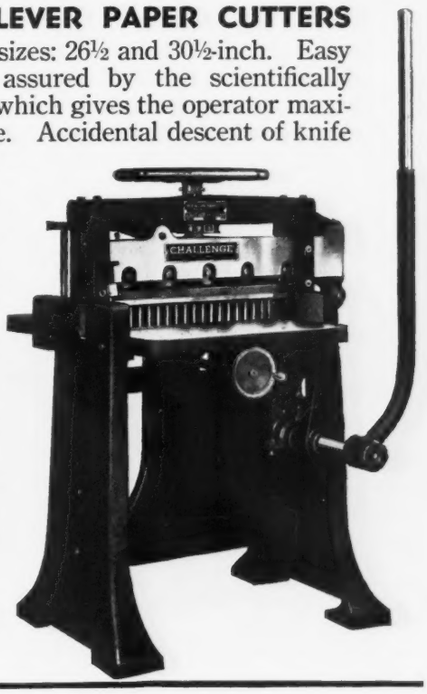
Challenge-

DIAMOND POWER PAPER CUTTERS

Made in three sizes: 30½, 34½, and 36½-inch. Designed to permit the operator to work in an easy, natural position, protected from injury by built-in safety devices. Has approved safety double-motion starting lever, double equalizing brake, safety paper guard, steel duplex measuring tape in both 1/12 and 1/16-inch fractions, exclusive "easily-squared" back-gage, convenient back-gage wheel and locking lever, positive back-gage lock, extra heavy three-bearing main shaft, and a host of other features. The Challenge Fluorescent Light and Tape Magnifier is an extra accessory. Write for special catalog that gives full details on Challenge power and lever cutters.

Challenge LEVER PAPER CUTTERS

Made in two sizes: 26½ and 30½-inch. Easy operation is assured by the scientifically curved lever which gives the operator maximum leverage. Accidental descent of knife is prevented by a safety device that locks knife bar. Strong solid center support prevents sag below cutting line. Challenge Lever Paper Cutters are also made in Pony sizes: 16¼ and 19⅜-inch.



Write today for full data and prices.

FOUND at last!

ALL OLDER METHODS OBSOLETED

What alert composing room machinist or executive hasn't readily seen the common sense of cleaning matrices and magazines together, by machine? Shouldn't it throw out of the window that half-century old, time-consuming job of running matrices out to clean them?

Why, then, hasn't the machine-method advanced farther? Why isn't every progressive composing room cleaning matrices and magazines together, by machine?

The answer is FEAR. Fear—not of the machine principle—but of the cleaning solutions. Fear that these solutions of the past, consisting wholly or in part of acids, would attack the brass and remove "false walls". Fear that poor face and "hair line" would result and that the useful life of the matrices would, thereby, be shortened.

FEAR NO LONGER

The Delgass No-Etch Process for simultaneously cleaning matrices and magazines of line-casting machines goes on from where older processes stopped. It attains the goal that all previous cleaning processes failed to reach. The Delgass Process, in short, actually does what other methods claimed, but failed, to accomplish. The Delgass Process actually cleans and brightens the matrices in the magazine, as well as the magazine itself, simultaneously, without running out the matrices, and does the job (1) thoroughly, (2) quickly, AND (3) SAFELY, for the cleaning **leaves matrix surfaces metallurgically unchanged.**

"Safely", in this case, means safely in the strict metallurgical sense, for the Delgass Process employs no acid whatever, and no other chemical that has any action on the brass except completely to clean and brighten it.

Only an acid-free cleaner can be used safely on matrices. Only the Delgass No-Etch Process offers an acid-free cleaner. Only the Delgass No-Etch Process offers a cleaner that quickly, completely AND SAFELY dissolves, loosens and carries off all grime, grease, gum and graphite. Only the Delgass Process offers a machine that makes the cleaning efficient, speedy AND SAFE.

THE DELGASS NO-ETCH MATRIX CLEANER

The Delgass No-Etch Matrix Cleaner is the result of long research and extensive field tests. It is a combination solvent, detergent and brightener. It has no effect on metals except to clean and brighten them. It cannot etch or otherwise harm brass or other metals, even if they are left in the solution indefinitely.

THE DELGASS CLEANING MACHINE

Here is another great advance in machine cleaning. The Delgass No-Etch Matrix Cleaning Process achieves its unprecedented results by the combined chemical action of the Delgass No-Etch Cleaning Solution and the agitating-centrifuging effect of the Delgass Cleaning Machine. The machine accommodates a magazine with its complete font of matrices in their respective channels. Place the magazine in the cleansing chamber, close the cover, pour in the Delgass No-Etch Cleaning Solution, snap on a switch. A motor revolves the cleaning chamber in a plane inclined 45 degrees.

DELGASS LABORATORIES, INC.

THE KEY TO SAFE CLEANING OF MATRICES

DELGASS

FIRST ACID-FREE CLEANING PROCESS

The result is a combined chemical and mechanical action that forces the solution at high velocity against all interior and exterior surfaces. The matrices and magazine are alternately submerged and raised out of the solution to expedite the rinsing action. All foreign matter is dissolved or loosened and carried away, leaving surfaces clean and polished, thus producing an extremely low coefficient of friction.

After cleaning and rinsing, the magazine—with its matrices still in place—is transferred to the dryer. Here, an electrically heated air-current is driven at high velocity throughout the magazine, thoroughly and speedily drying all parts. While one magazine full of matrices is drying, another is being cleaned. The entire process, from magazine-in to magazine-out, need consume no more than forty-five minutes.

BEWARE OF ACID CLEANERS

Past efforts produced processes that cleaned fast and thoroughly on the first cleaning but, due to the use of chromic acid, attacked the brass. On subsequent operations, cleaning became progressively less and less satisfactory. The reason is plain. It not only shortened the useful life of matrices, but the etched surfaces no longer retained their original smooth polish. These roughened surfaces thereafter picked up and held foreign matter in spite of repeated baths. Cleaning became increasingly difficult unless the strength of the solution was increased, thus further hastening deterioration of matrices. Moreover, the etched surfaces, which "dirtied-up" quickly, reduced the visibility of reference marks, and raised the coefficient of friction. Nor was this all—the conventional rocking motion used in old cleaning machines, shifting the mass of "mats" back and forth in the channels with a bang, endangered delicate escapement mechanisms.

All these faults are things of the past, for the Delgass Process overcomes them all. It is the long needed key to the SAFE, thorough, and quick cleaning of matrices and magazines.

FIND OUT HOW LITTLE THE DELGASS PROCESS COSTS

Tell us how many Linotype or Intertype machines you are operating and how many standard-size, split, and auxiliary magazines you use. With that information, we can prepare an estimate of what the Delgass Process would cost you to operate. Send us the data today.

DELGASS
NO-ETCH
MATRIX CLEANING PROCESS
PATENTS PENDING

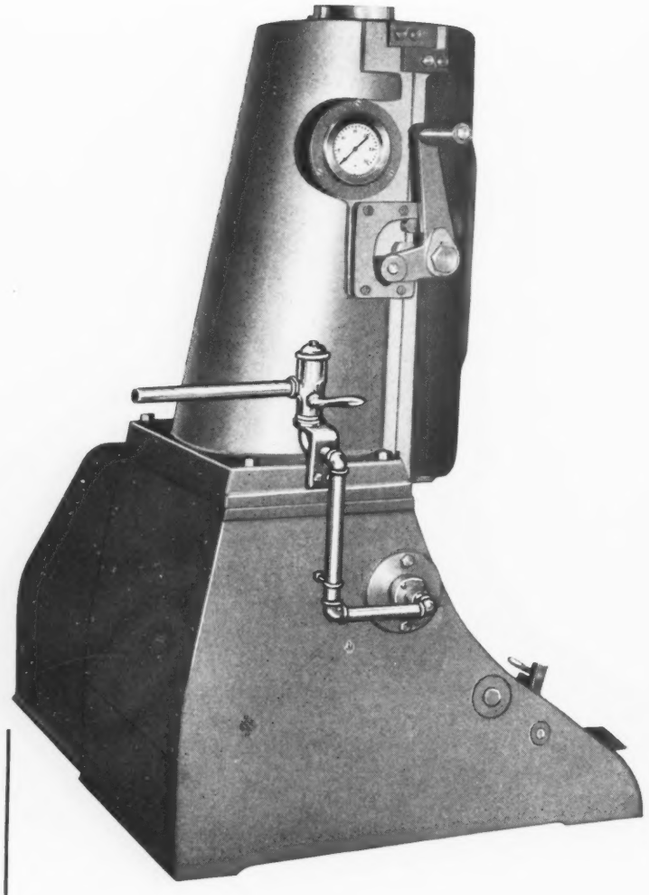
SEE DELGASS PROCESS EXHIBIT AT THE A. N. P. A. MECHANICAL CONFERENCE IN BUFFALO, JUNE 9, 10 AND 11. DON'T MISS IT!

GRAPHIC ARTS DIVISION
35 EAST 41 ST., NEW YORK

429

The DUPLEX Tubular Vacuum Casting Box

is in Use or on Order in the Following Newspaper Plants:



Denver, Colorado	*Catholic Register*
Washington, D. C.	*Mercury Press*
LaSalle, Illinois	*Post Tribune*
St. Charles, Illinois	*Roto-Color, Inc.*
Evanston, Illinois	*News Index*
Pekin, Illinois	*Daily Times*
Huntington, Indiana	*Our Sunday Visitor*
Lawrence, Kansas	*Kansas Color Press*
Owensboro, Kentucky	*Inquirer-Messenger*
Paducah, Ky.	*News-Democrat*
Augusta, Maine	*Kennebec Journal*
Lewiston, Maine	*Sun-Journal*
Fitchburg, Mass.	*Sentinel*
Quincy, Mass.	*Patriot Ledger*
Waltham, Mass.	*News Tribune*
Battle Creek, Mich.	*Enquirer-News*
Detroit, Mich.	*American Publishing Corp.*
Detroit, Mich.	*Safran Printing Co.*
Holland, Mich.	*Sentinel*
Monroe, Mich.	*News*
Billings, Mont.	*Gazette*
Missoula, Mont.	*Missoulian*
Jefferson City, Mo.	*Tribune Ptg. Co.*
Moberly, Mo.	*Monitor Index*
Sedalia, Mo.	*Democrat & Capital*
Nashua, New Hampshire	*Telegraph*
Buffalo, New York	*Everybody's Daily*
Olean, New York	*Times Herald*
Oneonta, New York	*Star*
Niagara Falls, New York	*Gazette*
Kingston, New York	*Freeman Pub. Co.*
Ashland, Ohio	*Times Gazette*
Cleveland, Ohio	*Shopping News—2 Boxes*
Cambridge, Ohio	*Jeffersonian*
Dayton, Ohio	*Shopping News*
Zanesville, Ohio	*News*
Bloomsburg, Pa.	*Morning Press*
Lock Haven, Pa.	*Express*
Pittsburgh, Pa.	*Herbick & Held Ptg. Co.*
Shamokin, Pa.	*News Dispatch*
Austin, Texas	*Tribune*
Brownwood, Texas	*Bulletin*
Charlottesville, Va.	*Progress*
Fredericksburg, Va.	*Free Lance Star*
Yakima, Wash.	*Republic*
Appleton, Wis.	*Post Crescent*
Racine, Wis.	*Journal Times*
Beloit, Wis.	*News*
Madras, India	*Hindu*
Trinidad, B. W. I.	*Guardian*

ANY USER OF THE DUPLEX TUBULAR VACUUM CASTING BOX IS GETTING BETTER PLATES AND BETTER PRINTING

Write for Particulars and Description

THE DUPLEX PRINTING PRESS COMPANY

Bbattle creek, michigan

Daycos take the "BARK" out of DOG DAYS

It's a fact, proved by the experience of printers the nation over, that Daycos, the original and leading synthetic rubber rollers, take the "bark" out of dog days. So, when the thermometer skyrockets to dizzy heights, it's the right time to switch to Daycos and get trouble-free production.

Daycos need no coddling and no time out to cool off—they won't melt down—they won't swell. With Daycos, there's no need to reduce pressroom speeds from 20 to 25%—all you do is to set Daycos once and forget them because, even on multiple shifts of high speed runs, Daycos turn out top-quality work, all the way. What's more, these tough, durable Daycos are tailored to the exact plasticity that your work requires.

Keep your pressroom out of the stew this summer—get the one and only genuine Dayco Roller, with renewable surface (Re-Daycoing) feature, that's typical of every Dayco.

THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO
The Originators and Pioneers of Synthetic Rubber Printing and Lithographic Rollers
CANADIAN REPRESENTATIVES:
Manton Bros., Ltd., Elizabeth Street, Toronto

Dayco Rollers

THE ORIGINAL AND PIONEER SYNTHETIC RUBBER PRINTING AND LITHOGRAPHIC ROLLERS

THE ALL-PURPOSE ROLLER FOR D FORM, DISTRIBUTOR, DUCTOR, ETC.

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DAYCO
PATENTED RENEWABLE SURFACE

CAN BE APPLIED TO
ANY METAL STOCK

BEHIND EACH PIG OF IMPERIAL METAL STANDS THE IMPERIAL METALLURGIST

This laboratory control assures every type metal user of an unvarying uniformity in Imperial metals. This is the underlying reason why Imperial, year after year holds a dominant position in the type metal industry.

Imperial **IMPERIAL TYPE METAL COMPANY** • PHILADELPHIA • NEW YORK • LOS ANGELES • CHICAGO

SERVICE

TO THE NEWSPAPER INDUSTRY

SERVICE comes first with Goss — *service* in terms of engineering and *service* as applied to the maintenance of customers' equipment.

For more than half a century, Goss has devoted itself to product development — looking ahead . . . working in advance of the times . . . and making important contributions to the progress of newspaper production methods. Today, with so much of the nation's industrial capacity assigned to defense work, Goss engineers are planning for the future . . . designing new equipment — just as they did during the depression years when they produced the Goss High Speed Anti-Friction Press.

And when it comes to the servicing of Goss presses in the field, you can be sure that your needs will be promptly and efficiently fulfilled. No matter what this organization may be called upon to do in the interest of national defense, provision has been made to handle all calls for repairs and replacement parts.

Whether you are East, West, North, or South — regardless of your location or the nature of the emergency — the Goss Service Department can fill any order within a very short time after word is received at the factory. Write, wire, or phone at any hour — day or night!

THE GOSS PRINTING PRESS CO., 1535 S. PAULINA ST., CHICAGO

NEW YORK: 220 E. FORTY-SECOND ST. • SAN FRANCISCO: 407 CALL BUILDING. • LONDON, ENGLAND: GOSS PRINTING PRESS CO., Ltd.

GOSS

TRUE THEN

TRUE NOW

Editor & Publisher for October 11, 1924

Certified Dry Mats Made In America!

An Announcement and a Pledge.

PUBLISHERS and stereotypers realize and appreciate the "economic soundness and humaneness" of the cold process of stereotyping. That is why the dry mat has made such rapid strides in recent years.

Fully fifty per cent of the American dailies that stereotype have discarded the obsolete wet mat hot process and now use the dry mat cold process, and it has been predicted in some quarters that by 1928 every U. S. daily newspaper will be using dry mats exclusively.

Many publishers and stereotypers, while realizing the value of the dry mat, have hesitated to adopt it for the simple reason that the source of supply in the U. S. has heretofore been in the hands of but one manufacturer. Today American-made **Certified Dry Mats** are available, and publishers and stereotypers are assured of a free and competitive market. American dailies need no longer depend on foreign supply with its uncertainties, and with an open market in the U. S. publishers and stereotypers cannot afford to do so.

By manufacturing in America we have assured the security and continuity of supply so essential to the newspaper business as well as the dry mat itself. Publishers and stereotypers need no longer hesitate about discarding the time-consuming, expense-devouring steam table, roll-your-own wet mat process. The time-saving, economic cold process of stereotyping has arrived and is here to stay.

Where Certified Dry Mats Are Made—West Groton, Mass.

Certified Dry Mats are new in name only. The manufacturing process is that of the well-known Claus Ideal dry mats which have been in use for many years throughout Europe and for the past four years in America. In extensive tests made here during the preliminary stages of manufacture we have developed an all-American dry mat which embodies the experiences, needs and preferences of our publishers and stereotypers.

We cheerfully acknowledge our deep feeling of appreciation and gratitude to the craft for their constructive criticisms, and the painstaking tests which they have made in the friendliest spirit of co-operation.

So we come to you with a time-tried and proven quality, checked up as it were, by the prospective users themselves. And with Quality will go hand in hand a Service which publishers and stereotypers will not be long in recognizing and adopting as their own.

The officers and personnel of this company are all well versed in the dry mat business and are familiar with the requirements of our newspaper plants and stereotype job shops. Our business policy may be summed up in the slogan *"Profits through Service,"* and we are all heart and soul bound to make this slogan a living force in the dry mat business.

Now a word as to price. While **Certified Dry Mats** are made and sold on the basis of Quality, first, last and all the time, our prices will always be the lowest consistent with the high quality standards governing this business.

Certified Dry Mats have the heritage of twenty years of experience to maintain as well as to back them, and it is our conviction that this reputation will not only be carried forward but augmented by the daily performance of American-made **Certified Dry Mats** in the newspaper plants and stereotype job shops of the country.

If you want to be assured of results in your stereotype department, not once in a while, but day in and day out the year round, you will need **Certified Dry Mats.** Samples are yours without any charge or obligation—just indicate the kind of equipment you employ such as casting box, press and the number of casts you must have from each mat, and we shall furnish you with the **Certified Dry Mat** made specially for your needs, and quote you prices as well as supply you with any other information you may desire.

A trial in your own plant will demonstrate to you what Certified Quality and Certified Service can be made to mean to you in your business.

We are now ready to serve you, and we welcome the opportunity to put **Certified Dry Mats** to the test.

Geo. A. Kubler,
President.

Certified Dry Mat Corporation
342 Madison Avenue **New York, N. Y.**

MADE IN U.S.A. BY THE CERTIFIED DRY MATS ORIGINAL CLAUS IDEAL PROCESS

TRADE MARK

"Profits Through Service"

Copyright 1924 C. D. M. C.

• Back in 1924, when Certifieds were introduced, they were widely acclaimed by publishers and stereotypers as the best aid for the stereotype foundry in producing plates of clean, clear printing quality . . . Since then, new brands of mats have been introduced and all mats have been improved . . . Whether Certifieds are still the best, we leave to your judgment to decide. We simply repeat what we said 17 years ago, "Compare and you will know."

• There must be some good reason, we submit, why more Certifieds are being used by daily newspapers for their own purposes than any other brand . . . why there are more Certified Syndicate Mats used in flat casting operations than all other syndicate mats combined . . . To compare is to know!

For dependable stereotyping, rely on Certified Mats, made in the U.S.A.

CERTIFIED DRY MAT CORPORATION
9 ROCKEFELLER PLAZA, DEPT. M **NEW YORK CITY, N. Y.**

Certified DRY MATS

LEADING PRINTERS

...use Ideals!

In the periodical field, among large, high-quality commercial plants and in the pressrooms of hundreds of progressive printers—Ideal Roller equipment is first choice.

Many of the new, high-speed presses are Ideal-equipped when they leave the factory.

This selection of Ideals is the result of careful analysis, experimentation to determine quality, and proof of the efficiency of these rollers in actual service over a period of many years.

The original *Ideal Vulcanized-Oil* distributing rollers are made from abundant domestic materials not required in defense preparations. These rollers have a natural affinity for inks, are precision-ground and are not affected by weather in any way. For extra strength and durability, order Durotypes, the newer, tougher Ideal Vulcanized-Oil Rollers.

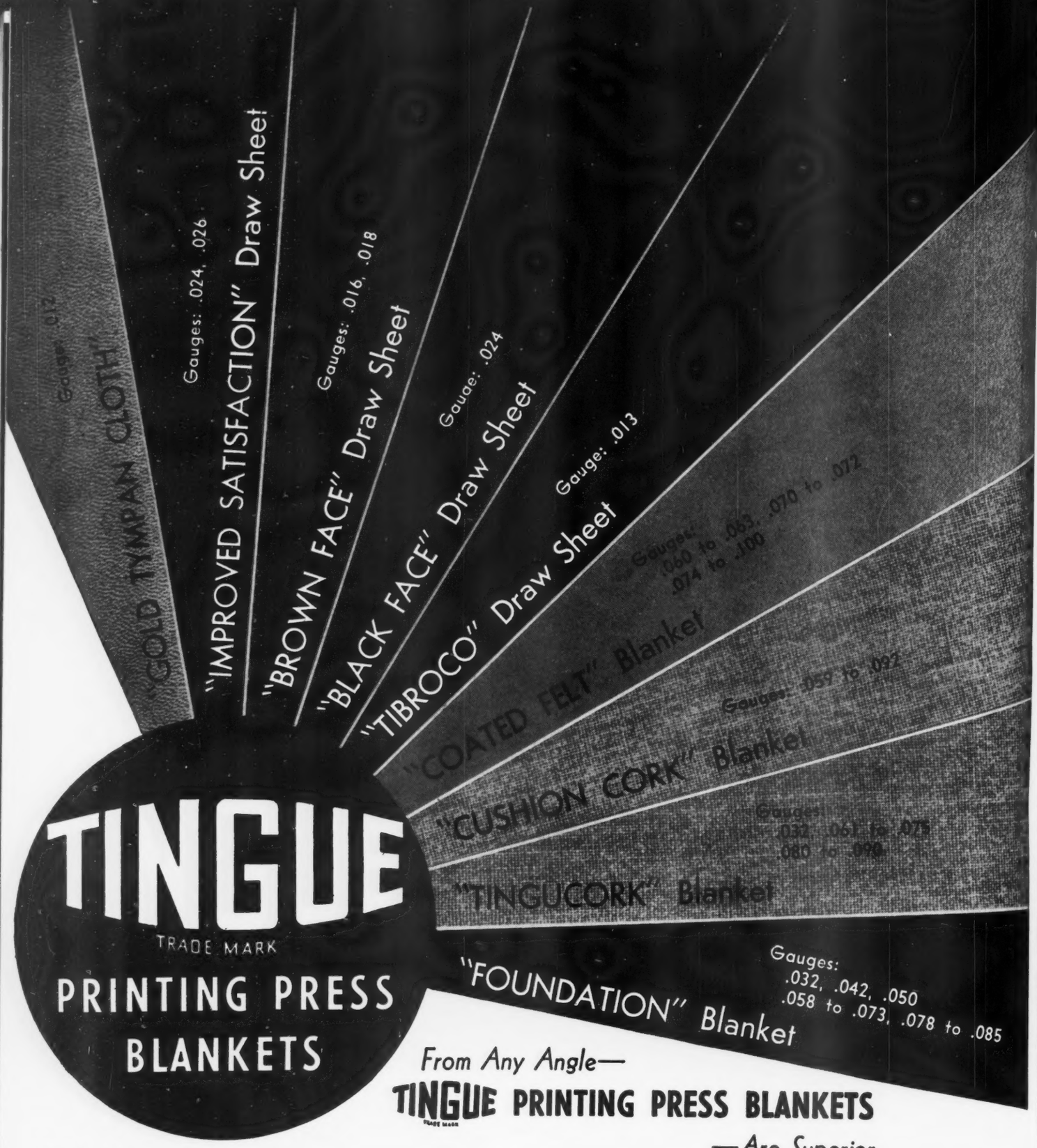
The *Ideal Process* system for medium-sized and large pressrooms consists of extremely soft, durable base rollers, a roller surfacing machine and surfacing composition compounded to meet seasonal changes.

Ideal Synthox Rollers present a perfectly smooth, lathe-ground surface of *full* synthetic material, affording constant and proper application of both linseed and heat-set inks to type and plates.

Ask about these popular rollers!

IDEAL ROLLER & MANUFACTURING CO.

CHICAGO, ILLINOIS *Branch sales offices located in principal cities* LONG ISLAND CITY, N.Y.


"GOLD TYMPAN CLOTH"
Gauge .012
"IMPROVED SATISFACTION" Draw Sheet
Gauges: .024, .026
"BROWN FACE" Draw Sheet
Gauges: .016, .018
"BLACK FACE" Draw Sheet
Gauge: .024
"TIBROCO" Draw Sheet
Gauge: .013
"COATED FELT" Blanket
Gauges: .060 to .063, .070 to .072, .074 to .100
"CUSHION CORK" Blanket
Gauges: .059 to .092
"TINGUCORK" Blanket
Gauges: .032, .061 to .075, .080 to .090
"FOUNDATION" Blanket
Gauges: .032, .042, .050, .058 to .073, .078 to .085

TINGUE

TRADE MARK

PRINTING PRESS BLANKETS

From Any Angle—

TINGUE PRINTING PRESS BLANKETS

—Are Superior . . . . . .

Stocked in gauges listed above
Special gauges made to your requirements

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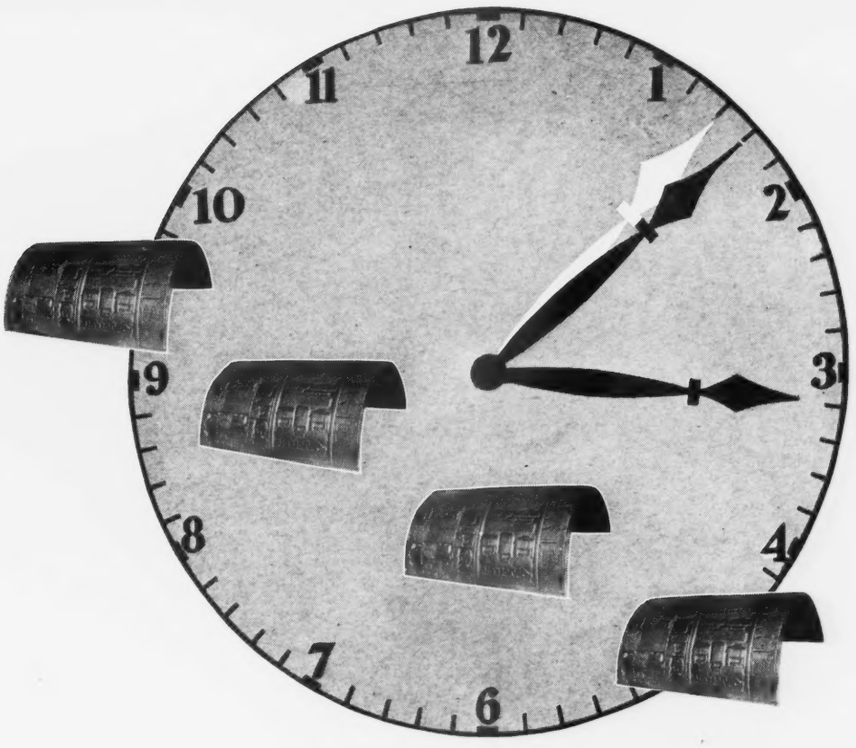


QUICKER STARTS

FOUR PLATES A MINUTE. That is the fixed, uniform, dependable speed of the Automatic Autoplate machine.

AUTOMATIC STEREOTYPING shortens and standardizes the time required to start a battery of presses. It puts a newspaper on the street earlier, with later news.

BETTER PLATE QUALITY. Plates made by the Automatic Autoplate, equipped with vacuum, are uniformly superior to ordinary printing plates—stronger, yet lighter in weight and easier to handle. You get more casts per mat, too—any number needed by the largest newspaper—because of the briefer contacts between the mat and the hot metal, and because of the additional cooling effect when vacuum is employed.

WRITE FOR PRINTED MATTER

WOOD NEWSPAPER MACHINERY CORPORATION

Plainfield, New Jersey • New York Office: 501 Fifth Avenue

WOOD Automatic Autoplate

for MAXIMUM CAPACITY IN MINIMUM SPACE

Interchangeable

WITH SINGLE-ROW BALL BEARINGS

NORMA-HOFFMANN

PRECISION ROLLER BEARINGS

NORMA-HOFFMANN BEARINGS CORP'N.,

STAMFORD, CONN., U. S. A. • *Founded in 1911.*

Write for the Catalog. Let our engineers work with you.

Their solid cylindrical rollers provide maximum contact area, giving larger load and shock-absorbing capacity than any other single-row bearing of like dimensions. Thus, when NORMA-HOFFMANN PRECISION ROLLER BEARINGS are used in place of ball bearings, a greater factor of safety is provided, together with added life, particularly under vibration and overload. PRECISION qualities in workmanship and materials adapt them alike for both low and high speeds.

An interesting illustration showing the bark, or virgin cork, (being stripped from the tree) from which our cork molding blankets are made.

"TRU-MOLD"

CORK MOLDING BLANKETS

better molding with **"MATCHED"** *sets*

A "matched" set is matched in weight and density. Uniform density throughout these blankets gives "Tru-Molding" over the entire surface of the form. "Matched" sets of blankets make it unnecessary to readjust molding pressure for individual blankets.

Order 2 or 100 — they will be matched in all their qualities. Each blanket has been scientifically tested and graded. We can furnish HARD & EXTRA HARD (Special) blankets that are matched in weight and density.

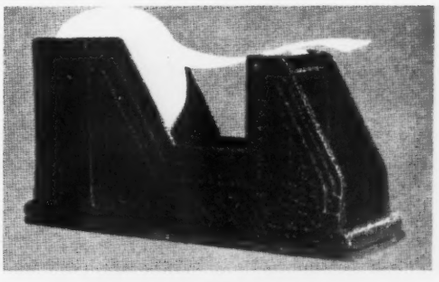
"FLECTO"

Gummed Backing Felt

POROUS — to permit the quick and easy escape of steam, coated with glue that will not slip or leave the matrix under heat. Its adhesive will not crack, peel or crystalize under any climatic conditions. Made in gauges .021, .025, .030 and .035, in sheets 18" x 24". And in gauges .040, .045, .050 and .060 in sheets 18" x 22"— cut in strips without extra charge. Free samples on request.

"PLATE-TAK"

Cut Mounting Tape



No Tacks! No cement to squeeze out! Simply lay a strip of this SUPER-THIN tape under the cut; press down by hand and the cut is there to stay. When through, the tape strips off, leaving clean surfaces on both cut and base. . . A word on the dispenser shown above — it brings still more speed, convenience and economy to the use of Plate-Tak.

SUPERIOR: Tail boards, .054 gauge for curved casting boxes; and .054, .035 and .025 gauges for flat casting boxes. ALSO: dry mat storage boxes, cork lined to retain moisture . . . Send for our general catalog covering all items.

EASTERN NEWSPAPER SUPPLY

9603 Northern Boulevard **Corona, New York**

IN INDUSTRY, too, speed is the order of the day. And ever since 1804, Johnson craftsmen have helped to speed the wheels of American business by producing the finest inks they know how to make.

Today, Johnson Inks represent the best results of modern machinery combined with long experience and technical skill. Johnson Inks are the modern running mates to modern presses and modern printing.

CHARLES ENEU Johnson AND COMPANY

PHILADELPHIA, PA.

NEW YORK • CHICAGO • ST. LOUIS • PITTSBURGH • CLEVELAND
DETROIT • BALTIMORE • KANSAS CITY • ATLANTA • DALLAS

JOHNSON

INKS

For the NEW Rouse Band Saw

Cuts Ludlow, Linotype and Intertype Slugs for Run-arounds

MAGICAL in performance, the Rouse Band Saw cuts to variable measures the slug output of an almost unlimited number of linecasting machines — whether every slug is a different measure or all the same length. It has no equal for sawing slugs for ads, catalog or publication pages.

It has such GREAT SAWING CAPACITY that executives in smaller plants figure their need for it on the basis of its production rather than the SAVINGS it brings them.

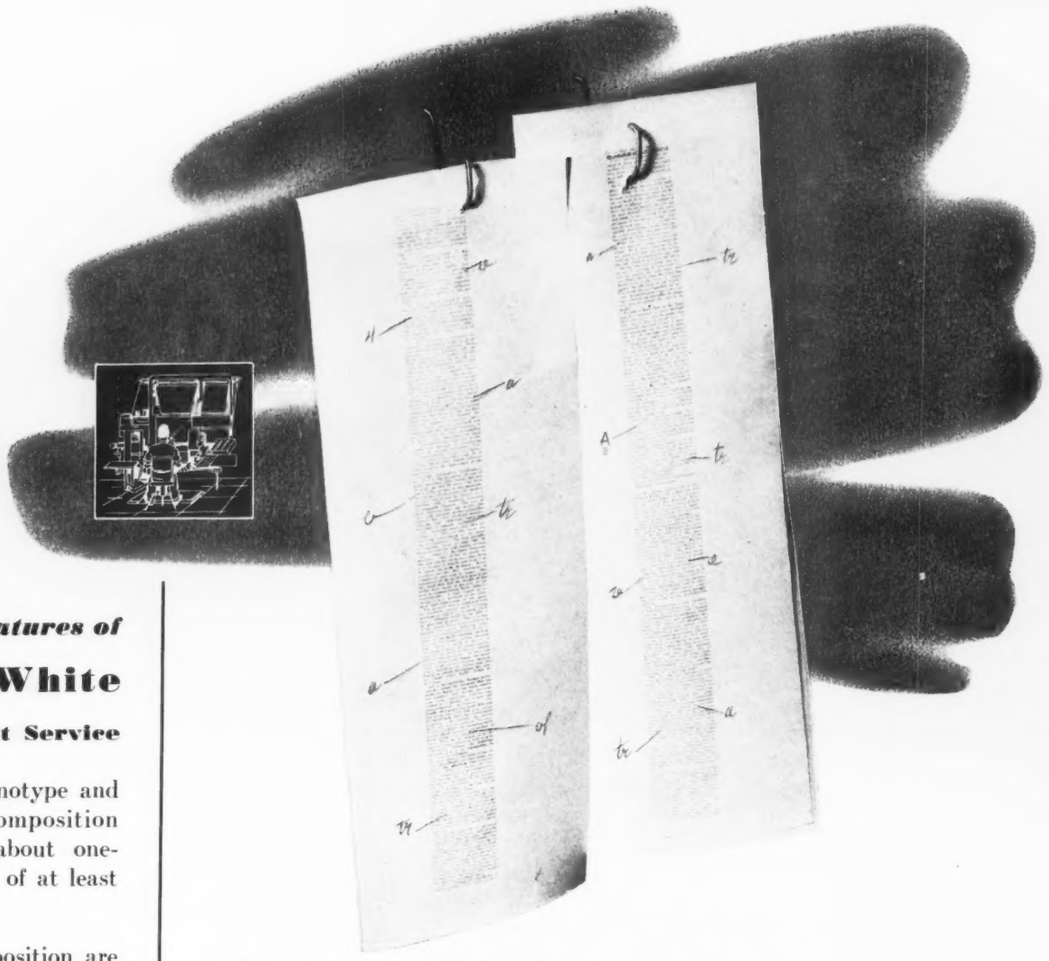
But small plants DEMANDED a Rouse Band Saw — at a low price. The result is the ECONOMY Rouse Band Saw which automatically selects lengths of Ludlow, Linotype, or Intertype slugs and saws to variable measures as fast as straight matter.

The ECONOMY Rouse Band Saw has the same slug length selection feature, and accuracy of cut of higher priced models. It is priced LOW because of the substitution of hand for mechanical feed. Speed of cut is practically the same as on more expensive models.

Full information on the NEW Economy Rouse Band Saw — and Ludlow Slug Sawing Device will be mailed at your request. Write today.

H. B. ROUSE & COMPANY

2216 NORTH WAYNE AVENUE, CHICAGO, ILLINOIS



Important Features of

Black & White

Matrix Contrast Service

Total errors in Linotype and Intertype news composition are reduced by about one-third. A reduction of at least 25% is *guaranteed.*

Errors in ad composition are reduced by 40% or more.

One-third fewer correction lines are handled by floor men. Fewer proofs, fewer revises, less non-productive time.

Forty per cent more OK takes can be placed in page forms without waiting for corrections.

Railroaded news matter contains at least 50% fewer errors of the kinds that are apparent to the average reader.

And Matrix Contrast Service saves cleaning mats.

One-third of all those errors could have been prevented

Yes, BLACK & WHITE Matrix Contrast Service prevents *one-third* of all errors in Linotype and Intertype news composition . . . with even larger savings in advertising composition.

Think of the savings of time and bother that such a reduction of errors would mean in your composing room!

Write for PROOF of the savings effected . . . in plants of about the same size as yours. Please state how many line composing machines you are using.

MATRIX CONTRAST CORPORATION

Sole Licensees of the Percy L. Hill Matrix Contrast Patents Nos. 1,466,437 and 1,796,023

EMPIRE STATE BUILDING, NEW YORK

European Agents: Funditor, Ltd., 3, Woodbridge Street, Clerkenwell Green, London, E. C. 1

Black & White
MATRIX CONTRAST SERVICE

Here are some of the newspaper printing executives you will want to meet while attending the A.N.P.A. Mechanical Conference in Buffalo: Left to right, they are: Lew Woelfel, Mechanical Superintendent of the Buffalo Evening News; *William Govier, Mechanical Superintendent of the Buffalo* Courier Express; *Mechanical Superintendent Joseph Klausman of the Greater Buffalo Press, Inc.*

WEDDING *of engineering and production viewpoints at Buffalo*

A. N. P. A. Mechanical Conference—Mechanical problems to be analyzed collaboratively

A TYPE of program which has never been utilized previously should bring satisfactory answers to questions to be asked by production and mechanical executives at the A. N. P. A. Mechanical Conference to be held at Hotel Statler, Buffalo, N. Y., on Monday, Tuesday and Wednesday, June 9, 10 and 11. As has been announced by Manager W. E. Wines, the Mechanical Committee adopted this type of program at its mid-winter meeting. The entire conference program is of the forum type. There will be no prepared speeches and parallel clinical meetings have been eliminated. In place of the usual procedure, each of the morning and afternoon sessions will be devoted to a mechanical department. In this way, the Monday morning meeting will be devoted to a discussion of the problems of smaller newspapers (papers of 50,000 or less circulation). The composing room meeting occurs Monday afternoon; the stereotype session on Tuesday morning; the pressmen on Tuesday afternoon; the photo-engravers on Wednesday morning, and Wednesday afternoon to the problems of advertising agencies, black and white, color, r. o. p. color and rotogravure.

The general plan will be to have on the platform outstanding executives from the mechanical department to which the session is being devoted, as well as technical representatives from the supplier companies serving that department. Questions for discussion will be collected from the floor during the discussion. In addition, all questions discussed by the group on the platform will also be open for discussion by mechanical executives in the audience. Discussion from the floor will be encouraged.

Comparative Halftone Making

One of the features of the conference will be a comparative display of zinc halftones participated in by a number of member offices. All of the halftones will be made from identical photographic copy. It is expected that the halftones will be featured in the discussion at the photo-engraving meeting on Wednesday morning.

Grocery Ad Composition

Another interesting activity will be featured at the Monday morning meeting for the smaller newspapers. At this time, proofs and production data related to the setting of identical grocery ad copy will be exhibited. Production time, composition method, and other data will show how the ads were produced.

The Program

At the Monday morning meeting, Manager W. E. Wines of the Mechanical Department, will discuss *The Supply Situation and National Defense*.

The balance of the opening meeting on Monday morning will be devoted to a discussion of the problems of the smaller newspapers, including grocery ad composition. The program was developed by a committee consisting of Fred W. Schaub of the Decatur (Ill.) *Herald* and *Review*: Don P. Miller of the Allentown (Pa.) *Call-Chronicle;* Russell B. Miller of the Bloomington (Ill.) *Pantagraph;* John A. Burke of the Gannett Newspapers, and Mechanical Committee Chairman F. H. Keefe of the Newburg (N.Y.) *News*.

Forum Chairmen and Assistants

Members of the Mechanical Committee who will officiate at the forum meetings as announced by the Mechanical Department, are given below. However, the list of those who will also be on the platform is not complete at the time of going to press.

Composing Room—Production Manager Leon A. Link, Cleveland *Plain Dealer*, is chairman. He will be assisted by Production Manager John A. Burke of the Gannett Newspapers, and Mechanical Superintendent Russell B. Miller of the Bloomington (Ill.) *Pantagraph*. In addition, on the platform will be H. L. Higgins, Composing Room Superintendent, Detroit *News;* James N. Johnson, Composing Room Foreman, Syracuse *Post-Standard;* C. L. Buttermore, Composing Room Superintendent, Cleveland *News;* George G. Cooper, Chief Machinist, Rochester *Times-Union;* H. R. Freund, Intertype Corporation; C. E. Murray, Linograph Company; John Hilpman, Mergenthaler Linotype Co.; Russ D. Shaeff, Lanston Monotype Machine Co. and August H. Blohm, Ludlow Typograph Co.

Stereotype Meeting—Production Manager D. H. Parker of the Montreal *Star*, will preside. He will be assisted by Business Manager F. W. Schaub, of the Decatur (Ill.) *Herald* and *Review*, and Mechanical Superintendent Leslie Griner of the Youngstown (O.) *Vindicator*. The following experts will also comprise the jury on the platform: George Smith, Stereotype Superintendent, Buffalo *Courier-Express;* W. B. Astor, Jr., Stereotype Superintendent, Memphis *Commercial Appeal;* Paul Fite, Stereotype Foreman, Charleston (W. Va.) *Gazette;* R. G. Angell, Press and Stereotype Foreman, Ithaca *Journal;* George H. Fuller, Stereotype Superintendent, Cleveland *Press;* J. W. Addison, Press Superintendent, Hartford *Times;* C. S. Davis, Jr., Lake Erie Engineering Corp.; Kenneth Koessler, Greater Buffalo Press; A. W. Schorger, Burgess Cellulose Co.; Curtis S. Crafts, Goss Printing Press Co.; Earl P. Lacure, Duplex Printing Press Co. and E. A. Rehm, Wood Newspaper Machy. Corp.

Pressroom Meeting—Pressroom Superintendent Walter Ogden of the Cleveland *Press* will be chairman. He will be assisted by Mechanical Superintendent A. H. Burns of the New York *Herald Tribune* and General Mechanical Superintendent John J. Shea of Hearst Newspapers, New York. On the platform also will be the following, although the list as yet is not complete at press time: W. E. Becker, Press Superintendent, Baltimore *News-Post;* Alex Kramer, Press Superintendent, Syracuse *Post-Standard;* Chas. W. Mallm, Press Superintendent, Peoria *Journal-Transcript;* Robt. G. Angell, Press and Stereotype Foreman, Ithaca *Journal;* Larry Conley, Stereotype Superintendent, New York *World-Telegram;* James Beckett, International Printing Ink Co.; J. H. McGowan, J. M. Huber, Inc.; Earl P. Lacure, Duplex Printing Press Co.; Curtis S. Crafts, Goss Printing Press Co. and C. E. Drange, Walter Scott & Co.

Photo-engraving Session—Don P. Miller of the Allentown (Pa.) *Call-Chronicle;* Engraving Superintendent Maurice A. Hagan of the Philadelphia *Inquirer;* and Engraving Superintendent George Geist of the Cincinnati *Times-Star*, will be in charge of the photo-engraving meeting. In addition, there will be three engraving foremen from small, medium and large newspapers on the platform and several others (list not complete at press time): Julius Klein, Engraving Superintendent, Buffalo *News;* A. C. Fritz, Engraving Superintendent, Fort Wayne *News-Sentinel;* Wm. I. Siegfried, Photo-engraver, Jamestown (N.Y.) *Post;* C. J. Kennedy, Chief Photographer, Buffalo *News;* Ben Dalgin, Director of Art and Reproduction, N. Y. *Times* and John McMaster, Eastman Kodak Co.

Advertising Agency Session—On Wednesday afternoon, the program arranged by the committee will be devoted to advertising agency problems. The committee consists of John W. Park, Production Manager of the Chicago *Tribune;* Tennant Bryan, Richmond (Va.) *News-Leader*, and F. Lester Yeager of the Indianapolis (Ind.) *Star*. Others cooperating in the program are: Arthur Dultgen, Roto Superintendent, New York *Daily News;* C. A. Jordan, Stereotype Foreman, Buffalo Color Press; L. S. Pinover, Intaglio Service Corp. and John M. Hopkins, *This Week*.

Valuable Technical Bulletin

The B. F. Goodrich Company has issued a 6 page information bulletin on the *Manufacture of Rubber Printing Plates*. Copies of the bulletin are available upon request to the company. The processes involved are summarized, including materials and methods developed by the company's technical and research staffs. The bulletin gives detailed information on selection and installation of equipment, various types of matrices in common use, and how they are made. Molding rubber plates is described with complete directions.

Executive Meeting Dates

A.N.P.A. Mechanical Conference—June 9, 10, 11, Hotel Statler, Buffalo, N. Y. W. E. Wines, Manager, 370 Lexington Ave., New York, N. Y.

United Typothetae of America—Oct. 27, 28, 29, Palmer House, Chicago. Donald Rein, Executive Vice President, 719 Fifteenth St., N. W., Washington, D. C.

International Association of Printing House Craftsmen—August 10, 11, 12, 13, 14, Lord Baltimore Hotel, Baltimore, Md. Harry M. Sachs, Convention Chairman, Room 401, City Hall, Baltimore, Md.

National Association of Photo-Lithographers—September 18, 19, 20, Netherlands Plaza Hotel, Cincinnati, Ohio. Walter E. Soderstrom, Executive Secretary, 1776 Broadway, New York, N. Y.

National Association of Printing Ink Makers—September 10, 11, 12, Greenbrier Hotel, White Sulphur Springs, W. Va.

Illinois Mechanical Conference—September 26, 27, 28, Rockford, Ill. Ed Nagel, Secretary, Champaign (Ill.) *News-Gazette*.

S.N.P.A. Eastern Div. Mechanical Conference—September 1, 2, Louisville, Ky. Walter C. Johnson, Sec.-Mgr., S.N.P.A., P. O. Box 1071, Chattanooga, Tenn.

S.N.P.A., Western Div. Mechanical Conference—February, 1942. C. W. Tabb, Secretary, 723 Texas Bank Bldg., Dallas, Tex.

New England Newspaper Mechanical Conference—October 4, 5, 6, Hotel Statler, Boston, Mass. Walter C. Crighton, Secretary, New London (Conn.) *Day*.

New Jersey Newspaper Mechanical Conference—October 20, Atlantic City. John T. Arnold, Secretary, New Brunswick (N.J.) *Home News*.

American Photo-Engravers Association—October 20, 21, 22, Drake Hotel, Chicago, Louis Flader, Commissioner, A-1446 W. Van Buren St., Chicago, Ill.

International Trade Composition Association—Wm. E. Lickfield, Executive Secretary, 629 Chestnut St., Philadelphia, Pa.

National Graphic Arts Education Association—June 29, July 1, 2, Hotel Hollenden, Cleveland, Ohio. Fred J. Hartman, Educational Director, 412 National Savings and Trust Bldg., 719 Fifteenth St., N. W., Washington, D. C.

PROBLEM *in letterpress, gravure and offset-lith press production is to maintain similarity to OK sheet over entire press run*

By ADAM HENRI REISER

UNIFORMLY printed sheets cascading from a press constitute a signpost on the highway of good printing. To have reached that signpost, it has been necessary for the paper maker, the ink maker, the plate maker, and the pressman—to mention some of the factors of production—to function well, and in all probability overcome many problems. It is so whether the printing happens to be gravure, letterpress, or offset-lith.

Each method of printing—each process faces a somewhat different task in reaching this signpost. Obviously, the very nature of the printing surface is responsible. Gravure work is printed from a sunken image; letterpress uses the relief image, while offset-lith, broadly speaking, makes use of the planographic image.

In each of these methods the pressman's problem concerns his ability to keep clean the open parts of the picture or the work. You see, the picture or work represents a series of open or uninked parts and those that are inked. To keep the ratio of open parts to inked portions equal to those on the OK sheet over the entire run, the pressman makes use of various press auxiliaries, depending upon the process.

Gravure

In gravure, for illustration, a doctor blade removes the excess ink from the plate or cylinder. Any foreign particles having an abrasive action may cause streaks or scratches when caught against this doctor blade. To minimize the effect of the streaks, some bring the blade closer to the cylinder. But excessive tightening of the blade causes additional wear on the plate or cylinder surface. The net result of this will be a change in the complexion of the design and a change in color value. Some precautions have been taken in the preparatory steps of platemaking to offset this wearing trend. Chromium plating the gravure cylinder is said to aid considerably in keeping the image areas static and the impressions uniform.

Letterpress

Relief halftones and type characters require care, too, for the black and white balance of the subject must be maintained. Here, however, an advantage exists because of the relief nature of the printing surface. Properly set ink rollers for distributing ink of the correct consistency is a prime necessity. Correct makeready, coupled with an ideal impression kiss, also contributes immensely. It is true that multi-color work introduces many variables that affect the finished product. Color printing sequence, elapsed time between the printing of colors, the wearing effect of the colors on the metals used in letterpress printing, workups, ghosts, slurs and numerous other factors all leave their mark on the quality of the job. Ink drying, or failure to dry, plays an important part in the way colors lift in successive printings.

Yes, letterpress like gravure, poses many interesting problems for the pressman. But let us examine offset-lith. No doctor blade troubles greet the offset pressman. Neither is he faced with the high gloss coated stocks, the heavy lays of ink, nor the intricate makeready of letterpress. He is faced with an entirely different set of conditions.

Offset-Lith

Instead of the raised portions of the printing medium representing work or non-work areas, as in the case of letterpress or gravure respectively, the work and non-work areas of offset-lith lie in the same approximate plane. To appreciate thoroughly the problem confronting the offset pressman running albumen or deep-etch plates (the two modern photo-lith plates) let's examine the plates used for this work.

Principally, offset-lith plates are either zinc or aluminum. The surface of the metal is grained. Graining increases the surface area of the plate, and thus makes possible: (1) Greater dampening surfaces in a given area, and (2) Greater tenacity of the work on the metal. Fig. 1 shows a comparison between a smooth plate and a grained surface.

In coating such a plate extreme care must be exercised in the control of the whirler speed, solution viscosity and grain depth. Otherwise the peaks of the grain may protrude and be barren of coating. Tinting troubles arising from this cause cannot be corrected by any amount of ink or fountain adjustment.

In albumen work, the image rests upon the bichromated albumen base (see Fig. 2). On the other hand, the deep-etch image rests at the pits or base of the grain, having been etched down to that level. In neither case is there an appreciable difference in the levels holding the work and the surrounding surface. Consequently, inkers passing over the press plate would tend to distribute ink over the entire surface area if no provision were made to confine inking to work areas alone. This operation, known as etching, converts the non-work areas to water-receptive or hygroscopic parts through a chemical action, leaving the work areas grease-receptive.

Dampening rollers passing over the plate's surface deposit a film of moisture on the non-work areas just prior to the inking operation. The dampening solution used in the water fountain functions in two ways: It supplies the moisture, but, it must also be of such a composition as to keep inviolate the hygroscopic coat-

(*Continued on Page 102*)

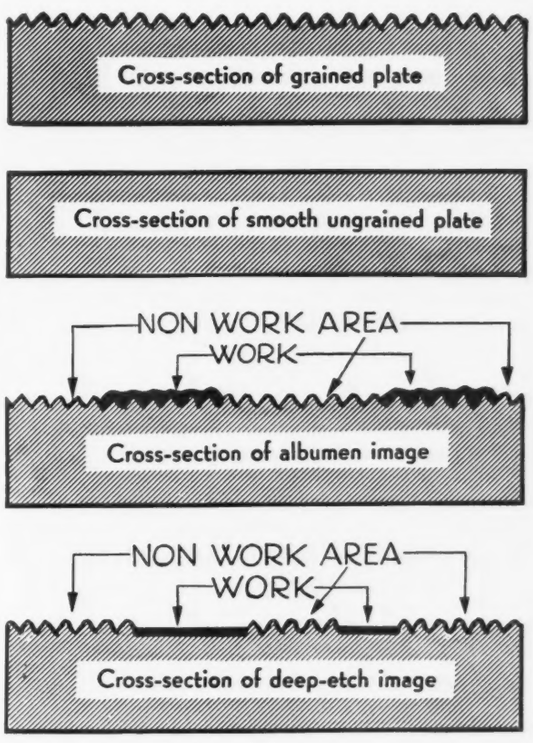


Fig. 1—Greater surface area over a given length of offset-lith plate is apparent in these comparative enlarged cross-sections.

Fig. 2—Cross-sections of albumen and deep-etch offset-lith plates to show work and non-work levels. Difference between the two is so minute (measured in thousandths of an inch) that non-work areas must be kept moist to resist ink application. (Greatly enlarged cross-sections.)

Sedately, this one-story stucco exterior building and lot occupy approximately half a city block.

"WE'LL TRY ANYTHING NEW,"

is one of the policies of Florida's St. Petersburg Printing Company — Aggressive attitude keeps plant busy

By MacD SINCLAIR

IN presenting another of a series of articles to readers of *Printing Equipment Engineer* about printing plants in various parts of the country, we'd like to remark that all of them are operated upon some kind of an ideal — more or less, according to the enthusiasm of the management. It isn't every plant management, however, that sets up an ideal and then consistently operates in harmony with it.

Such a plant is that of the 9-year-old St. Petersburg Printing Co., Inc., in St. Petersburg, Fla. First, we want to tell you that this firm executes four-color process, fine halftone and a general line of publishing and commercial printing, including college and high school annuals, die-cut displays, and the like—all by letterpress.

After paying a visit to the plant it seemed that since the business policies of the plant's management are consistently observed and that this firm's activities are constantly directed toward the production of letterpress printing in which are employed so far as possible all the latest innovations, the story should be worth passing on to our readers.

We will let General Manager Ben Granger state his company's business policies, before going on with the story, because upon these policies rests the success of the St. Petersburg Printing Co. Mr. Granger said: "Quality is our first consideration, and of course, service is next. We work on the basis of a fair profit on every order or we do not accept the work. We are very careful regarding credit. Our bad debts have been practically nothing since the firm was organized in 1932."

Officers of the St. Petersburg Printing Co., Inc., are: Dixie M. Hollins, President; Ben Granger, Vice President and General Manager; P. F. Thomson, Secretary-Treasurer.

General Manager Granger is assisted by Miss Bertha Blair in production matters. R. O. Glidden is composing room foreman; Monroe Reynolds supervises job press production; C. A. Hustin is foreman of the cylinder pressroom, and H. W. Brown supervises production in the bindery department.

As has been stated above, the St. Petersburg Printing Co. is equipped only for letterpress printing. All of the executive personnel (even the employees) seem to glory in the fact. Instead of moaning about the state of business or its competition, all of those concerned, from the manager on down the line, constantly endeavor to create something new. "We are on the lookout for and try out anything new or striking as quickly as possible, especially the new inks and papers," said Mr. Granger. "We think this keeps us out in front with our customers. While we may get 'burned' once in a while from a practical standpoint, yet our eagerness to try out new things nets a favorable reputation among our progressive customers. In

Vice President and General Manager Ben Granger

addition, we get a thrill out of trying." Judging by an exhibit of printed specimens to be seen in the office, this mental attitude brings results. One broadside printed for the firm's own promotional purposes contains one page of illustrations. First impression is that the page was done by gravure. A folder turned out for one of the St. Petersburg hotels is printed letterpress on fabric-finish offset stock, and it has the appearance of having been done by offset. This latter job, by the way, was printed in response to a demand by the customer for "a job that will look like it has been done by offset."

Office-Plant Cooperation

In answer to the question about obtaining cooperation of the mechanical staff, Mr. Granger stated, "The office cooperates with the mechanical staff." To a visitor, it seems that this works two ways — not only does the office cooperate with the production personnel, but the latter in turn gladly cooperate with the office because the departments are furnished everything necessary to secure best results. Most of the employees have been with the firm since its incorporation and the general feeling among them is one of "family cooperation."

A considerable volume of the firm's annual work is printed in color. To avoid experimenting with inks in the plant in attempts to match engravers' color proofs, the proofs together with samples of the stock which is to be used are submitted to the ink-maker. Color matching troubles have been practically eliminated by using special inks for each job. Just as in any other well supervised business, a daily record for each printing order is kept in the office. These records are checked daily against the scheduled delivery date so that progress in the production departments can be regulated exactly.

Promotes Own Business

Out of a total of 40,000 commercial printers in the United States, Mr. Granger is one of the minority believing in the active promotion of the printing business among users. These promotional pieces may be created with two thoughts in mind. One is to suggest that perhaps the customer can turn the idea contained in any particular promotional piece to his own use, and the other is to demonstrate the resourcefulness or flexibility of the production personnel in executing work so as to present unusual effects. Within the latter classification falls a four-page broadside, published by the St. Petersburg Printing Co. It measures 18 in. by 22¼ in. and is entitled *Celebrating 500 Years of Printing Progress*. No less than 12 colors of ink (counting black as a

A Pictorial Trip Through St. Petersburg (Fla.) Printing Company's Plant

Upper right-hand corner shows a view in cylinder pressroom. Office entrance. Recent examples of printing are mounted on display board at right.

A partial view of composing department. On the three line-casting machines are produced all straight composition. Display composition is practically all hand-set.

This husky gentleman moves paper stock hither and yon, from stock room to pressroom to bindery.

To be perfectly honest, we'll tell you this two-page-wide strip is a composite view—three sides of the bindery department. Production capacity of this department is ample to handle any large-edition work coming from the pressroom.

color) were used in printing the broadside on Champion 80 lb. Wedgwood Coated Offset.

The front page of the broadside is printed in two colors with metallic-like ink, cerise and green. Lettering is in black ink and in self-color of the white paper. The optical effect of each page is different because of the varying technique used on each.

The two inside pages are reproductions of posters originally printed for the Florida Citrus Commission. Incidentally, the grapefruit poster won first award at an exhibit of Southern printing. The grapefruit poster appearing on page two of the folder was printed from three-color plates with gloss process inks. For contrast purposes, on the opposite page is printed an orange juice poster with straight three-color process inks.

At first glance, page 4 of the folder appears to have been done by gravure. The page consists principally of halftone interior mechanical department views overprinted with dark brown ink on a solid buff-tinted background, tastily arranged for the reader's quick comprehension.

In addition to the prize-winning poster mentioned above, the St. Petersburg Printing Company holds an Award of Merit for excellence in booklet printing from the Southern Master Printers' Federation.

The Building

The one-story stucco-exterior building and grounds occupy approximately one-half city block at 118 Eighteenth St. South, in St. Petersburg, Fla. Floors in the production departments are cement block. Daytime illumination is diffused entirely through ample skylight areas, and night-time illumination is furnished through mazda lamp fixtures. On cool days, crude-oil burning equipment controlled by automatic regulating devices maintains proper working temperature for the production departments.

Plant Equipment

So that our production and mechanical executive readers may form some idea about plant production capacity and the range of work executed by the St. Petersburg Printing Co., we are setting down here the names of the major equipment items: In the composing room the bulk of publication work is set by 1 Model 8 and 1 Model 14 Linotypes and 1 Model C Intertype. Mostly, Hamilton equipment is used in the way of compositor's type cabinets, storage cabinets, makeup tables, etc.

Pressroom equipment includes 3 Miehle Cylinder Presses (1 No. 00 with automatic feeder and extension delivery, 1 No. 4 with automatic feeder and extension delivery, and 1 No. 2 with extension delivery); 1 Miehle Vertical and 4 Chandler & Price platen presses; a 24 x 36 Thomson Dieing and Creasing Press with die-making equipment.

Other equipment items, used principally in the bindery, are a Seybold Paper Cutter, 2 Cleveland Model B Folders with Dexter Feeders; a Christiansen 7-station Gang Stitcher, 2 Morrison Single-head Stitchers, Rosback Perforator and Punching Machine.

Change—*A small word with expansive meaning to production and mechanical executives—Printing, like many another handicraft before it, is becoming industrialized*

By THOMAS ROY JONES*

*President, American Type Founders, Inc. Abstract of address delivered before the fourth annual Eastern Seaboard Conference of the Graphic Arts Industries, Atlantic City, N. J., April 1941.

There is one thing in this world of which we can always be certain and that is change. It is the one thing which is unchangeable. Look at anything about you. It is not the same as it was yesterday and it will be different tomorrow. You cannot deny change and survive for she is a vixen and casts aside those who refuse to recognize her and fall in with her moods.

WITH respect, specifically, to the graphic arts, signs are not wanting that the whole set-up of the industry has been and is changing. From the angle of production, the rapid recent development of new high-speed equipment is tending to force the establishment of larger production units, involving larger capital investments, with ever increasing emphasis on up-to-date management. This will result, on the one hand, in intense specialization in certain departments of the business and, on the other, in the creation of units of high flexibility in which all the routine is streamlined to maximum economy and speed. New methods of composition, plate making and plate duplication, color control and the like are already foreshadowed. Printing, like many another handicraft before it, is rapidly becoming industrialized.

Not long ago, we installed a web offset press which replaced seven flatbed letter presses. That scares me to think of it. But I can't close my eyes and imagine it didn't happen.

To me, as a manufacturer of printing equipment, the question of printing production is a vital one. It is, however, no less vital to you. If the business of printing is going through something of an internal revolution in which more modern equipment and more modern manufacturing methods are becoming increasingly important, then it becomes essential for every producer of printing who does not wish to die of pernicious anaemia to examine his mechanical setup and his production routine with the most critical scrutiny. Mechanically, Graphic Arts reproduction has been going ahead with tremendous speed, and, though this progress may be temporarily checked by reason of war, this will only mean a renewed burst of speed when the emergency has passed. Today things are being done in printing production which were undreamt of ten or even five years ago. And each step forward in press efficiency, in simplicity of make-ready and operation, in inks, in paper and the like means that the man who is uninformed or lazy or just stupid is by so much more outclassed.

Think of the strides which have been made in processes and methods in the last ten years. Offset; offset plate making; web-fed offset; rotary high-speed multicolor letterpress; rubber plates and gravure. Change, change, change. And these are forcing two other great changes in the industry—size and specialization.

Can't Pay For Paper and Ink Out of Baby's Bank

We will explore the subject of size a little further. A man can't purchase a multi-color offset web press together with the platemaking and other equipment necessary to its operation on a shoestring. Furthermore, he can't finance the huge quan-

tities of paper and ink devoured by one of these machines out of the baby's bank. Here we have a simple example of the trend toward size and what causes it.

This web offset press isn't as versatile as the sheet-fed flatbed which it superseded. Also it requires a tremendous amount of work to keep it going. If it is kept going on a suitable product, it can produce an amazing quantity of work at a low price. Hence its owner is forced to specialize. He goes out with the determination to corner all of the work suitable for his press and he often succeeds to the utter consternation of his competitor who yells bloody murder about price competition. But this isn't price competition—it's efficiency competition—the results of specialization and the only thing you can do about it is to find something to replace the lost business, for it is never coming back.

Specialization Trend

There is also a trend toward specialization which arises not by reason of specialization of equipment but by reason of a study of one's own business. It has been my observation that the man who has chosen a specialty product after a careful survey of the market and his ability to fill that market is on very sound ground and I have yet to see one who merchandises his specialty and refuses to touch any other work no matter how tempting, who isn't successful.

One man specializes in high-grade labels; another specializes in a particular method of merchandising cheap labels to a specific clientele and has become rich.

One man specializes in presswork for others—about the most difficult specialty in the industry for it is, for a given quality, purely price competition and the man who tackles that field has to know all the answers.

So here we have a tremendous trend in the industry which most of us haven't realized but from which all of us have felt the pinch of competition—specialization. We have specialization of production; specialization of mechanized equipment; specialization in new ideas; specialization in product; specialization in quality; specialization in markets and specialization in marketing methods. And wherever I have observed the specialist who knows what he is doing I have observed success while the general practitioner who takes all kinds of work regardless, meets the other fellow's price, and whose salesmen go around with the approach "Anything for me today?" spends a lot of time talking about price cutters and remains the ever-present headache of my credit department.

Functions of Printing Executive

Now a word as to the functions of the printing executive. These are first, *organization*, which is the process of analyzing the jobs to be done and assigning some one to do the work. Second, *coordination*, which is the process of keeping every one in line and happy, and third, *emphases*. This is the crucial job. It implies keeping the duties of the chief executive clear so that he may throw his efforts, energy and originality into sales, production, finance or whatever, wherever demand develops or weakness occurs. It also means that he can throw his weight into the opening in the business which may be caused by one of the changes which we have considered.

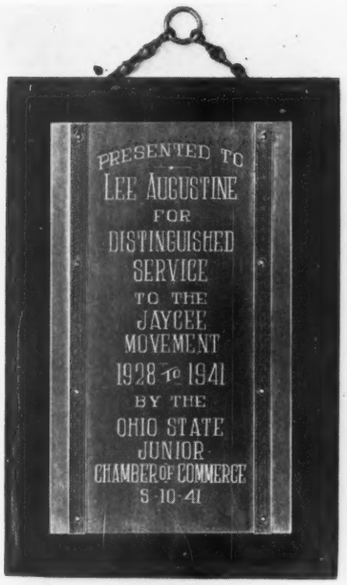
The Present Emergency

In conclusion, I want to say a few words about the printing equipment business and the effect of the present emergency upon it. So far the production of printing equipment has not been seriously curtailed. At ATF we are now producing as much or more for our regular customers than at any time in the past five years. But I think, as the situation with respect to defense becomes increasingly intense, there is a serious prospect that the equipment manufacturer will be called upon to turn over more and more of his productive capacity to national needs. Shortages are already beginning to appear in basic materials and these also will have their effect upon supplies of printing equipment.

The present war is a war of mechanical production. In the last war, it took eight men behind the lines to support one man at the front. Today it takes eighteen men behind the lines to keep one active soldier supplied. In the last war it was estimated to cost $25,000 to kill one of the enemy. Today that cost is estimated at $75,000 to $100,000. What this means is that the manufacturing effort required to keep an army in the field is three or four times that required twenty-five years ago. There can be no other answer but an enormous effort by the manufacturing facilities of the country—and the printing equipment business cannot hope to remain untouched by it.

Presented With a Plaque In Recognition of Service

VICE President Lee Augustine of the Printing Machinery Company, Cincinnati, was presented with a plaque in recognition of the services he has given to the Ohio State Junior Chamber of Commerce. The award was made at the association's meeting held in Canton during the early part of May.



On July 1, Mr. Augustine will have completed a term as national director. At this time he will have terminated a long and active career in the Junior Chamber of Commerce movement. He was instrumental in the organization of the Ohio State Junior Chamber of Commerce and after several years work the first state convention was held in Springfield, O., in 1929. Later he served the state organization as vice president and in 1940 as national director. In addition, he has served as three-term president of the Cincinnati group and twice as its secretary.

Monotype Report

The forty-eighth annual report of the Lanston Monotype Machine Company, Philadelphia, was presented by President Harvey D. Best to a stockholders' meeting held at Alexandria, Va., on May 1. The report covers the fiscal year ended February 28 this year.

On February 28, the Company paid its one hundredth consecutive quarterly dividend. Operations of the parent company and its wholly owned domestic subsidiary, Monotype Company of California, after provision for taxes of $98,498.64 and depreciation and amortization of $184,537.98, resulted in net earnings of $64,175.69, or $1.24 per share. Dividends of $1.50 per share were declared and paid, 26c per share having been paid from surplus.

During forty-eight years the Company has designed, engineered, manufactured and marketed to the printing trade more than $100,000,000 of its products.

"It is the purpose of the Company," reports President Best, "to continue the offering of the larger part of the factory capacity for Defense work, but we must of necessity be prepared to serve existing customers with necessary supplies and replacement parts to permit the keeping of plants of users in operation."

Tingue, Brown Price List

Tingue, Brown & Co.'s new price list of printing press blankets has been announced. It is published in 8½ in. by 11 in. size, is provided with an index tab and is punched for file folder. The center insert contains swatches of some of the company's blankets and drawsheets with specifications. A copy will be sent to any mechanical or pressroom executive requesting it.

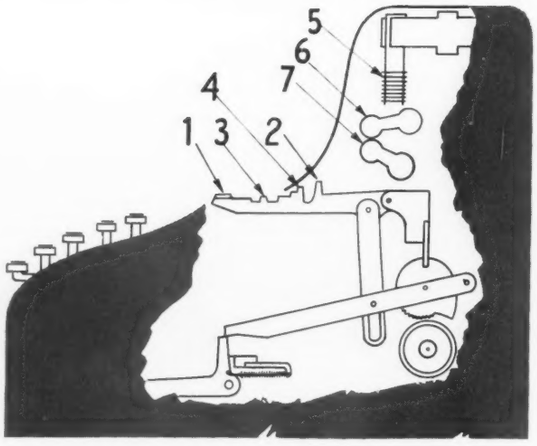


Fig. 1—Diagrammatic representation of Reynolds Automatic Power-Driven Composing Typewriter. The keybar actuating mechanism is similar to the keyboard action of line-composing machines. This machine produces the perforated tape which represents the composed and justified type lines. The tape from this machine is used to operate the type assembling and printing machine shown in Fig. 5. In making its upward stroke, the keybar not only causes the tape to be perforated, but it also prints the type character represented by the perforation on the upper edge of the tape. It also forms a contact through projection *3*, to set in motion one or several perforating pins operated by solenoids. The word spacing computation is accomplished as follows: The numbered index arrows identify functions of the keybar and tape-punching machine as follows: *1* is the appropriate letter character which prints the letter symbol corresponding to the perforated combination on the upper edge of the tape as shown in Fig. 2; at *3* are the protrusions which close the contacts at *5* to cause the proper perforating pins (not shown) to punch the combination holes in the tape; at *2* and *4* are shown the dogs between which is cut a depression to rock a lever *6* which, through a ball clutch computes progressively the setwise widths of selected characters in the line; *7* is the word space counter.

Body Type Composition

for Offset-Lith Reproduction — Proposed automatic composing typewriter and automatic printing machine form two-unit combination for producing platemakers' reproduction proofs

By STAFF WRITER

IN AN invention which he is pleased to call an automatic composing typewriter, B. E. Reynolds, 828 North Elm Ave., Jackson, Mich., applicant for patents, has drawn to some extent upon efforts of other inventors in developing a new method of preparing offset-lith reproduction proofs for newspaper straight-matter, book and magazine composition.

The invention provides for an automatic power-driven typewriter upon which is produced in a single typing perforated tape, which in turn is used to control and actuate a separate composing and line-printing unit. The printing unit assembles the letter character printing elements on the type bars in justified form and prints one line at a time. The tape-controlled printing machine can be used for converting the tape produced by several power-driven typewriters into reproduction proofs. Mr. Reynolds claims an operating speed of 40 lines per minute for the printing machine.

The Composing Typewriter

As has been mentioned above, this automatic mechanism consists of two machines: A power-driven typewriter-like tape-punching machine and an entirely separate assembling and line-printing machine which is controlled in operation by the perforated tape. The power-driven typewriter prefabricates a control tape which may be stored, corrected, edited, or used at will to control the automatic printing machine. Included in the invention is the supposition that the control tape may also be prepared by remote control such as is now used for control of line-composing machines.

To the right of each perforated pattern along the edge of the tape is the character it represents, typewritten on the tape for the purpose of allowing anyone to read what the tape represents. In addition, various guide perforations appear on the tape and a row of perforations, one between each pair of words, which guides the emplacement of word-space patterns. Definite parts of each section of tape are reserved for control perforations such as the delete and repeat functions of the automatic printing machine.

All these perforations except the word space patterns are placed on the tape as the typist selects lines upon a keyboard. When a key is struck contacts are closed by the key bar to form circuits to a gang of perforators which punch their pattern as a corresponding typewritten character is imprinted. Simultaneously, the selected character's width or the width of a minimum word space is added to a computation of the line's length. If a space is selected an additional computation is made which indicates the number of word spaces in the line and shows the typist by means of arrows upon a calibrated dial whether the automatic justifying mechanism can function to space out the line.

Upon completion of a line, the typist touches a key and the typewriter rapidly moves the tape along throughout the balance of a section of tape which might have controlled type bars, had the characters selected been of lesser widths. As this section is completed, a control and indicating panel is automatically set up to divide the justification of the line among the word spaces. Mechanism is provided to automatically select the correct perforated patterns so that blank spacing portions of the composite type and space bars appear in the line composed by the type bars in a way which will justify the line. These spaces do not vary more than one point in a line and all lines are completely full. Spacing perforations are inserted in a line as the succeeding line is being typewritten on the control tape. Such a tape is a complete record of each line's character widths and proper spacing.

The Line Assembling and Printing Mechanism

The mechanics of rapid assemblage of a succession of justified single lines composed of characters of a variety of widths is fundamental to the proposed method.

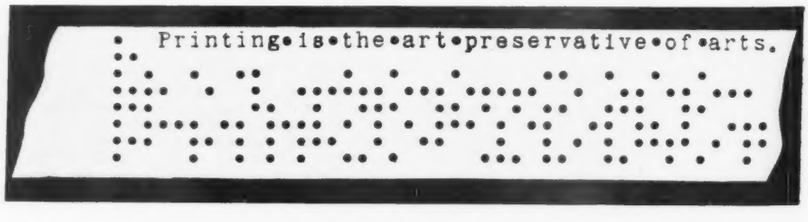


Fig. 2—Section of perforated tape produced on the Reynolds Automatic Composing Typewriter. The tape is used for actuating the Line Printing Machine shown in Fig. 5. In this illustration, it is shown that the typewritten character is typed above and one space to the right of each perforation symbol. The typed-in letters enable a copy-reader or proofreader to make corrections or alterations by splicing in complete new lines before the tape is sent to the printing machine.

It will be noticed that in the first row there are eight perforations. The seven lower positions are punched in varying patterns for obtaining the proper combination for the letters, figures or punctuation marks which they represent. The eighth, or top, hole is punched in the tape when the operator of the typewriter strikes the spacebar. At this time, the movement of the keybar, *1*, Fig. 1, in punching the hole combination and imprinting the letter character on the tape, also rocks the shaft of an adding mechanism which adds the minimum spacing distance and also rocks another shaft through another ball clutch mechanism connected to an adding machine which computes the number of word spaces in the line and indicates the amount the line can be spread by the use of maximum width spaces between the words.

Expressing it in another way, the adding machines function in two ways: (1) As he approaches the end of the line, a calibrated dial having two indicating arrows, shows the operator how much space remains to be filled and whether the line may be justified automatically; (2) The other function is for the control of the mechanism which automatically places the perforations for the proper spaces among the character patterns already in that line while the next line is being punched in the tape.

Fig. 3—Sectional view of type bar (normal size) employed in the Reynolds Automatic Printing Machine. At the left the type characters are mounted on one edge of the bar. At the right are the notches for aligning the selected letter character when an alignment bar enters the notch opposite the selected character to bring that character into exact alignment with the other type characters in the line.

The mechanical solution offering greatest possibilities of speed, in the opinion of the inventor, is by employing a 16 in. tapered bar about 1 in. high which mounts a full font of 90 type characters upon one edge. The characters are stepped in width from the widest to the narrowest and, at regular intervals among the long row of characters, spaces are left to allow a selection of word spaces which vary about a point in width. When such a composite type and space bar is to present a relief type letter at a common alignment point for printing, this bar is moved lengthwise until that selected letter is in line. In such position, the tapered bar determines the width of that character in the line. To obtain vertical alignment, adjacent bars taper in opposite directions with characters in reverse order but facing the same direction. Some of the early type- or matrix-forming machines used similar arrangements, suspending an assembly of matrix bars and dropping them until stopped by positioning pins. The weight of such an assembly, however, was great enough to cause considerable strain and wear upon the machinery.

Reynolds's use of such an assembly is an attempt to alleviate the former difficulties. The weight is laid upon the table top of the assembling and printing machine, and construction is of light-weight materials. The composite type and space bars in normal position are so arranged that the thin ends of adjacent bars overlap slightly and the butt ends are far apart. At the thin end a tongue protrudes from each bar. These tongues in overlapping or interlocking form an opening into which a right-hand vise jaw enters in locking a composed line. This is a new idea to permit the vise to skip type bars not needed for a line and to lock against the last selected character of a line. The left-hand vise jaw is a permanent raised ledge from the table top.

Manual manipulation of such type bars could be resorted to to form a line of type comparable to a hand-composed line of foundry type. But since speed is a vital factor, these bars are all moved at one operation to predetermined positions to form a justified line which has been calculated in advance, each character set-width being measured, each word space chosen in its proper width.

For purposes of exact character alignment, there is provided on each composite type and space bar, along the edge opposite the characters, a series of V-shaped notches cut cross-wise in the bar. When a line has been selected and moved to approximate position, an alignment bar corresponding to one or two such notches enters them clear across the line and moves every character into exact alignment. This alignment bar also planes the relief type faces at the same time. To enable the alignment bar to function without strain upon the positioning mechanism a slight give is permitted in the couplings between each type bar and the automatic positioning mechanism. (*Continued next Page*)

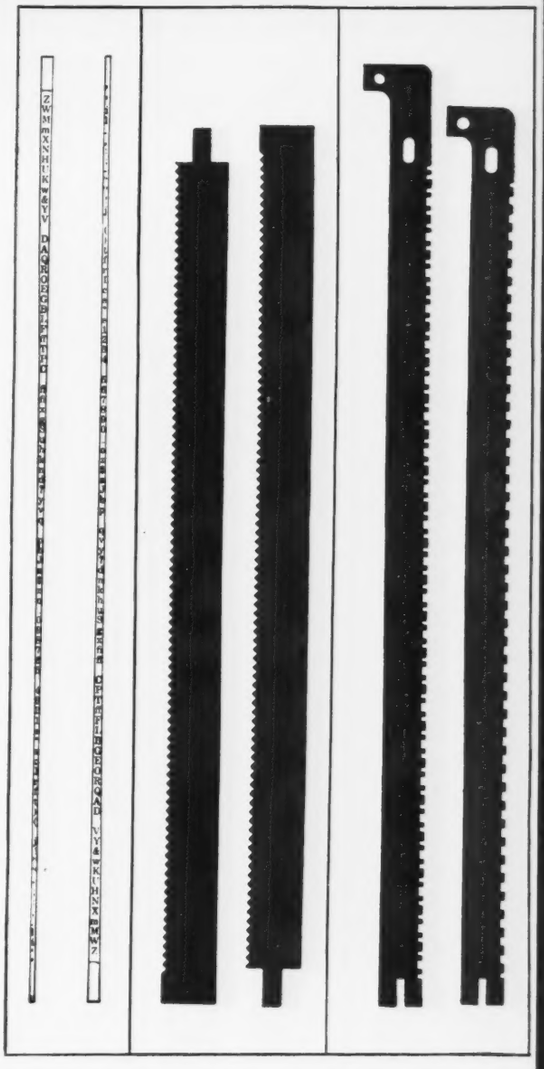


Fig. 4—At left are shown two wedge-shaped type bars, each bearing 90 type characters. The bars are approximately 16 in. long. Spaces between words are provided in a justified line by any one of 7 blanks placed every fifteen characters on the bar. These spacing widths vary in thickness about 0.014 in. It will be obvious to the reader that the bars when moved into justified line position are placed side by side with the taper for each bar in opposite direction. The characters on the bars with the taper running in one direction are arranged in inverse sequence to the bars with the taper running in the other direction, but still facing in the same direction. A group of these bars is arranged at either end upon the table top of the printing machine in sufficient quantity to equal the maximum number of characters ever to be used in a line.

In the center panel are shown side views of type bars illustrated in the panel at the left. The V-shaped notches are for use in aligning the letter character in each bar with the other characters in the line. A V-shaped aligning bar enters a notch opposite the character which is to be printed.

In the right-hand panel are shown two combination bars which are used to select and position the proper letter character to be used in a line of type.

The means for locating successive type lines is provided by the following described mechanism: At each end of the table top is placed a group of slides (not shown), each approx. the length of the type bars shown in the left panel. Each slide is attached by a link connection to the thick end of a type bar. Each of these slides moves in a fixed path to be stopped at any one of the 90 letter character positions on the connected type bar. While the type bar at the end of an 18 pica line may be No. 20 or No. 50, depending upon the widths of the selected characters in the line and the type bars have a corresponding transverse movement, the slides move in a longitudinal direction only. Each slide carries a pin at one end which is urged upwardly by a spring.

Above each of the slides is a series of razor-blade-thin combination bars, each of which moves 1/12 in. These combination bars are designed to perfect a series of permutations and in moving them they are made to form any one of 90 open notches into which the pin upon the slide enters to locate a type bar in printing position.

Movement of the combination bars is controlled by a bank of solenoids at each end of the table top. The solenoids receive electrical impulses from the entrance of feeler pins into the control tape perforations. Each of the perforated symbols in the tape moves the proper combination bar to form an open notch upon engagement with the pin in the slide as explained above. At the same time, movement of the attached type bar is stopped at a point which will position the selected type character in the line.

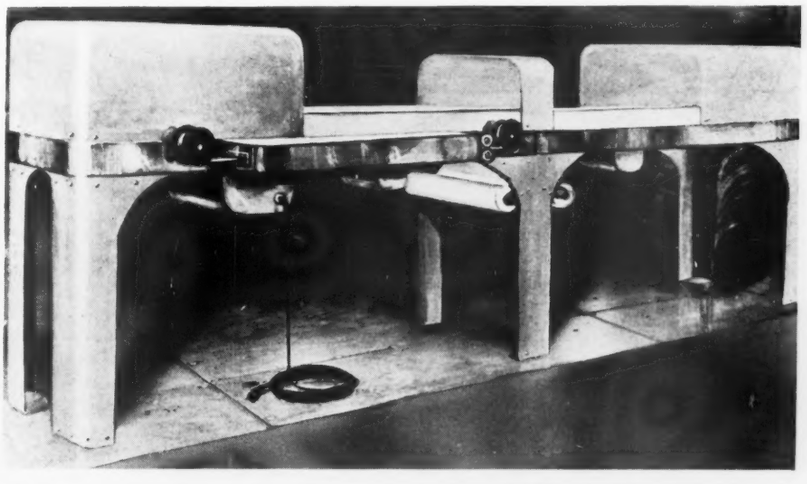


Fig. 5—View of Reynolds Printing Machine which is actuated by the perforated tape shown in Fig. 2. This machine is 9 ft. long, 1½ ft. wide and 4½ ft. high. The inventor claims a composing and printing speed of 40 lines per min. Maximum line width at the present time is 25 picas. A group of 40 type bars (80 bars in two groups of 40 each), shown in Fig. 4, rests in horizontal position upon and at either end of the table top. The number of bars in the two groups equals the maximum number of characters ever to be needed in composing a line of type. The type-bar-justified-line printing apparatus is located in the center of the table. At the present time, carbon paper, either in ribbon or roll form, is used for printing the type characters on the paper, although regular inking rollers and printers' ink may be used.

The press portion of the machine in the center of the table prints the type lines individually. The paper upon which the type lines are printed is wound on rolls and is moved along a predetermined distance after the printing of each line.

The next succeeding line of type bars is automatically assembled in printing position immediately after the bars in the previous line have been returned to normal position. Movement of type bars in assembling the justified line and returning the bars to normal position after the printing operation is extremely rapid and shuttle-like in action.

The type bar assembling unit consists of a solenoid-operated feeler block. The feeler pins enter the perforated holes in the line-wide section of tape at which time corresponding solenoids receive electrical impulses to actuate the type bars. All of the type bars in a line are assembled simultaneously since all of the feeler pins move into the perforated tape holes simultaneously.

Any method for proving a line of relief type may be used, the illustrated form being a long, narrow platen press which enters a slot beneath the center of the table and prints the line upon a roll of paper through carbon paper. By inverting this assembly and using the type bars with the letter characters on the upper side the inventor suggests that offsetting the ink from relief type to any suitable material, like an offset-lith plate, paper or transparency might be utilized. By the use of such method, types could read either way, could be proved upon any number of desired materials, and could be easily controlled in registration upon desired substances. To do this, small rubber-covered rollers apply the ink and offset it in succession, traveling in a geared track after being catapulted at suitable velocities across composed lines of type.

By such a method of offset transfer, states Mr. Reynolds, it might be practical to place late news upon lithographic plates. It is probable that much of any such page plate would be prepared previously by photographic processes. However, with the minimum time of 45 min. now considered the best the offset-lith industry can offer newspaper production in photographic preparation between the proof and the time the plate is put on the press, it seems this time will have to be materially cut before offset-lith enters the newspaper field.

There remains to be described the method of choosing rapidly successive series of locations for the type bar assembly. This is done by the positioning mechanism which is part of the printing machine in its use of the control tape produced on the automatic typewriter-like tape-perforating machine.

As is shown in Fig. 2, the printing machine control tape is a paper ribbon perforated crosswise with various patterns used to control electrically the printing unit. Definite lengths of this tape corresponding to the length of line in which the composition is being done, are used in the order prepared to arrange the type bars in justified lines.

As this tape progresses into the printing machine section by section, each crosswise row of perforations controls a solenoid-operated series of combination bars. These bars are razor blade thin and are engineered in a series of permutations which permits an open notch to be formed by them along their edge. This notch may be in any one of a number of positions corresponding to the position of the desired character upon the composite type and space bar. A bank of these combination bars with their solenoids is placed at each end of the printing machine and each bank is above an equal series of slides connected physically with the butt ends of half the type bars through couplings and rather long links. These links serve the purpose of avoiding transverse movement of type bars having the effect of drawing characters out of line. The slides (one for each type bar) carry a pin in each which, as slides are moved by a rubber friction roller toward the center of the machine, is urged by a spring to enter the opening formed by the combination bars at the proper point.

These slides travel without transverse movement in fixed paths. In operation, a section of tape sets the combinations for a complete line, the slides which move the type bars are driven toward the center until stopped in correct positions at which time a line of relief types is in approximate position at the center of the assembly and ready to be exactly aligned, planed, locked and proved. A similar drive roller cradled with the first slide drive rollers and rocked by a solenoid moves the bars to normal while combinations are being set for the succeeding line. The construction is designed to allow free reciprocation of the type bars with friction minimized and with a cushioning development built in the stop pins carried upon the slides.

This invention is the hobby of a working journeyman printer and is the result of experimental work conducted by him for several years. Additional experimental work and testing is necessary before the machinery can be marketed and Reynolds is endeavoring to interest some major manufacturer in facilitating development.

FACSIMILE BROADCASTING *of news with Finch equipment has been proceeding satisfactorily for several months*

By FRED C. EHLERT*

*Finch Telecommunications, Inc., Passaic, N. J.

WHILE many mechanical executives are familiar with its development, a number of them will be more than mildly surprised to learn that the facsimile radio newspaper is no longer a speck on the horizon but actually is here and in operation.

This departure from the age-old method of printing and distributing the news, however, did not burst forth upon the world simply, like the Princess Eugenie hat or miniature golf. It has struggled over a slow and arduous course. The men who have steered facsimile's development purposely avoided any shortcuts. Facsimile, they now are confident, has been built upon a firm foundation and, unlike a hat style or a game, is prepared to serve a purpose and definitely is here to stay.

However, it should be stated honestly that none of the more than 100,000 mechanical employees of newspapers should regard this new development with alarm. Even if the facsimile newspaper should reach its apogee, there always will be the newspaper for street sales and a portion of home delivery. It has been estimated that the value of daily newspaper printing equipment in the United States exceeds $160,000,000. Publishers will not easily let that go rust.

Although not long ago some newspaper interests viewed facsimile as a threat to them, the exact opposite view has always been maintained by W. G. H. Finch, president of Finch Telecommunications, Inc., Passaic, N. J., a designer and manufacturer of facsimile equipment. Mr. Finch feels that technical time and space limitations will necessarily make news bulletins so brief that there will be ample interest in the more detailed accounts carried by the newspapers. In fact, he believes the facsimile broadcasts will stimulate an entirely new demand for newspapers and magazines.

Obviously, the facsimile newspaper is just as available to the publisher as to anyone else. Many see in it the newspapers' answer to present-day news broadcasting competition. Some will take to it as an aid to their business of distributing news. Others will toss it off for some one else to pick up and use. But no matter who accepts this method of transmitting written news reports and illustrations into the home, facsimile engineers are certain that their new industry will prosper and grow because, if for no other reason, it performs a public service.

At present 14 radio stations in almost every section of the United States are experimenting with facsimile broadcasts. That newspapermen are interested in this new method of news distribution is indicated by the fact that of these ex-

Recently developed is this Finch Multiple-stylus Recording Machine which is said to receive eight tabloid pages per hour. Instead of the single stylus (as in the 2 col. machine), this one operates with a triple-pen recorder. It is now possible to receive 22 sq. in. or three hundred 6 pt. words per min.

Inventor W. G. H. Finch, President of Finch Telecommunications, Inc., inspects a roll of news received at his New York office by the 2 col. Facsimile Recording Machine.

perimental stations, nine are affiliated with daily newspapers.

In commenting on this new interest of the newspapers in facsimile, Mr. Finch told *Printing Equipment Engineer* that newspaper publishers "are finally recognizing facsimile not only as an aid to their newspapers but as a service to the public in much the same manner that the motion picture industry has recognized television."

Mr. Finch stated further that "recent evolutionary developments in facsimile have placed this rapidly expanding new industry in a position where it now is ready to take its place as an important means of applying journalism to radio facilities. With the advent of FM, multiplexing aural and facsimile programs became a reality," he said, "and this progressive development made possible the use of one channel for both voice and facsimile reception.

"The decision of the FCC in May 1940 to permit the commercialization of facsimile broadcasting opened a new avenue of revenue and employment to publishers and newspapermen. There is no doubt but that within a brief period of time more newspaper publishers will make use of facsimile broadcasting direct to the home."

The result, briefly, of these recent tests is that a new type of newspaper has been achieved, has won Federal Communications Commission approval and soon will become a commercial enterprise.

Briefly, facsimile broadcasting involves the conversion of text, or illustrations, such as photographs, line drawings, sketches or, for that matter, anything which can be put down on paper, into sound impulses which can be broadcast. These signals are picked up by the receiver and automatically transformed back into the visible form appearing as a recorded replica of the original copy. The received copy is permanent and, like printed matter, can be read wherever desired.

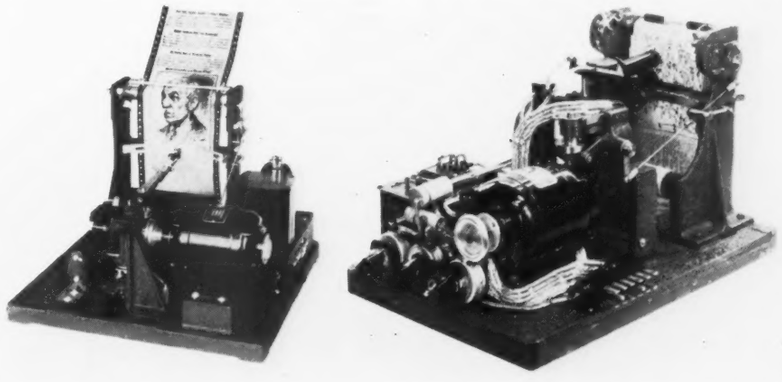
Comparatively, the transmitter is only slightly larger than the receiver. The copy to be broadcast is slipped into the machine as easily as a sheet of paper into a typewriter. No printing is necessary, although type-set copy is more effective, as the material is inserted directly into the machine. After the paper has been put in place and the switch turned on, a pipe-like armature begins to sweep back and forth across the sheet. The armature throws a needlepoint of light against the copy. As the light passes over a black spot (a portion of the written matter) there occurs a break in the reflection of the light. Thus when the scanning light returns to the white or black spot, it casts a full reflection. The varying shades of black produce reflections of changing intensity, thereby giving tone to illustrated copy. Through the action of the photo-electric cell these reflections are converted into sound signals.

The receiver is turned on by a time clock device. Here, too, there is an armature arrangement. The arm (called a stylus), passes across a specially prepared *dry* paper in complete synchronization with the armature in the transmitter. A black impulse will push the stylus down against the electro-sensitive coating of the paper making a mark. The lighter the impulse, the lighter the mark.

Facsimile can be broadcast through any circuit, whether short-waves, or normal broadcast frequencies, or over telephone wires. The distance of transmission is limited only by the amount of power used.

Currently in use is the two-column type of transmitter and receiver. These machines are constructed so that 100 sweeps of the stylus build an inch of copy. At the rate the stylus travels back and

(*Continued on Page 100*)



At left is view of Finch 2 col. radio facsimile recorder with cover removed. The stylus sweeps across the specially prepared paper (which is 4¾ in. wide) in complete synchronization with the transmitter armature. A black impulse pushes the stylus down against the electro-sensitive coating of the paper to make its mark. One hundred sweeps of the stylus builds an inch of copy. This receiver produces 5 ft. of newspaper copy, 2 col. wide in an hour.

At the right is shown the Finch 2 col. facsimile transmitter which is slightly larger than the receiver. After the paper bearing the copy to be reproduced has been inserted as shown in the machine and the switch has been turned on, the pipe-like armature sweeps back and forth before the slot to scan the copy. Through the action of the photo-electric cell the reflections cast by the varying shades in the copy are converted into sound signals.

Any conventional receiver tuned to the frequency of the transmitter will pick up the signals. The recording machine (shown at left above) converts the sound signals back into their visible equivalents on the paper.

Rotary Press Imprinting

—*A method of making and handling imprint segments for chain store circulars*

By HENRY B. GOODMAN*

*President and Mechanical Superintendent, Goodman Brothers-National Press Corp., Boston, Mass.

ONE of the problems confronting producers of chain-store circulars is how to imprint these papers economically at the time of production. Faced with this vital problem in dealing with a large chain-store customer, a method has been worked out at the plant of Goodman Brothers-National Press Corp. in Boston, Mass., for handling this operation quickly and economically.

As rotary presses of various makes, and even press models of the same make, are different in size and construction, no exact measurements are given here, it being the purpose merely to illustrate a process and furnish the idea for a useful tool. It is left to prospective users to develop their own facilities from the descriptions given here. The entire apparatus described is homemade, the only stock part used being a dummy brass cylinder furnished with the press.

Fig. 1 is a reproduction of part of the front page of a grocery circular, showing a store address. This particular edition consisted of 160 M copies with 43 imprint changes. The average running time, including the imprint changes and paper roll changes, was better than 20 M an hour. Several times during this and similar runs, a single hour's production included 22 M impressions, 11 imprint changes, and 2 or more roll changes. This speed was made possible largely by the use of the device described here.

The imprinting of the address of each store is done on another unit than the ones used for printing the circulars.

Fig. 2 shows in general an imprint segment held in place by the special clamping device described here. Note that it is only necessary to partly loosen two screws to change a plate segment.

Fig. 3 illustrates the manner of slipping the segments in and out of the recess in the dummy cylinder.

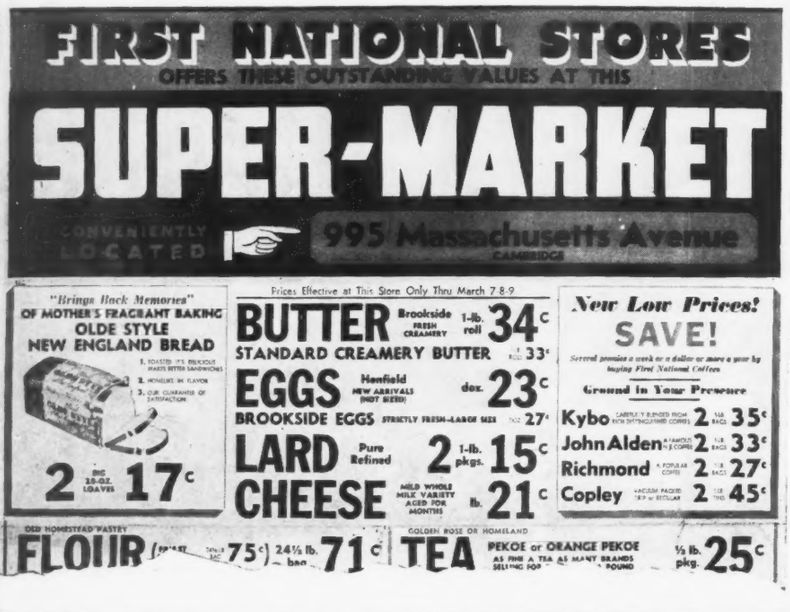
Fig. 4 is a close-up of the component parts of the assembly.

A is a stock brass dummy plate, the kind furnished by the press manufacturers. An opening approximately 12 in. by 4 in. has been cut in this plate for reception of the segment.

B is a recessed groove at one side of this hole, with two screw holes, made to hold the segment clamp. The holes in the groove **B** are purposely made oversize so that the clamp can be moved slightly to accommodate variations in the lengths of segments.

C is the segment clamp, consisting of the clamp jaw itself, with a beveled and toothed edge to grip the segment; a block which fits into the hook groove on the plate cylinder, and also serves as a double nut for the screws that hold the clamp in place, two short screws, and a small coil spring. This spring serves to lift the clamp off the segment when the screws are loosened, and permits rapid handling of the segments.

In practice, the dummy cylinder (*Fig. 4-A*) is placed on the plate cylinder and locked into position in the usual manner. It is assumed, of course, that the recess in this dummy cylinder has been positioned to meet the needs of the imprint job on hand; or made general enough to suit a variety of jobs. Keeping in mind that the locking block of the clamp rests in the hook groove of the plate cylinder, it will, of course, be necessary to rotate the plate cylinder out of gear to its approximate correct position, and then make final adjustments by means of the compensators. Registering the imprints is a simple matter, and no difficulty has been experienced in holding the register if the imprints are properly made.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OLDE STYLE
NEW ENGLAND BREAD
2 17¢
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BUTTER Brookside FRESH CREAMERY 1-lb. roll 34¢
STANDARD CREAMERY BUTTER lb. 33¢
EGGS Henfield NEW ARRIVALS (NOT BEER) doz. 23¢
BROOKSIDE EGGS STRICTLY FRESH—LARGE SIZE doz. 27¢
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Richmond 2 lb. bags 27¢
Copley 2 lb. tins 45¢
OLD HOMESTEAD PASTRY
FLOUR 24½ lb. bag 71¢
GOLDEN ROSE OR HOMELAND
TEA PEKOE or ORANGE PEKOE ½ lb. pkg. 25¢

Fig. 1

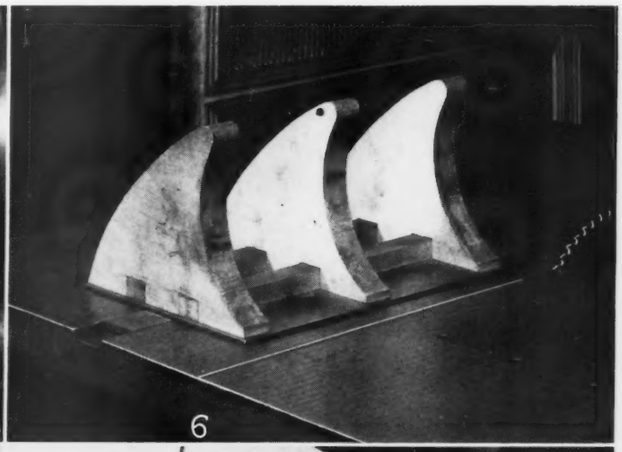
Fig. 5.—Method of Making Imprint Segments.—Lock as many imprints as convenient into a full page form, spacing them to a uniform depth. Divide the imprints with rules (see *Fig. 5*). Having pre-determined a size for the imprint segments (and this size must be maintained uniformly for all purposes) position the type imprint within these size limits. (GB-NP uses segments 11 in. long on back of plate by 2 in. deep.) Lock the form at one side of the chase so as to produce a full page plate, as in *Fig. 5-D*. This full page plate, and all others used for this purpose, must be cut down to an absolutely uniform length (*Fig. 5-E*). *If the finished segments are not all exactly the same length, it will be difficult to hold them rigidly in place by the clamp.* A good way to assure uniformity of plates is to set a dead stop in the cut-off machine, and work consistently to that one dimension. (At the GB-NP plant this was accomplished by bringing the ejection lever of the finishing machine forward to its full stroke, and holding the plate tightly against the lever before clamp was set on the plate. This resulted in uniform plates 11 in. long.)

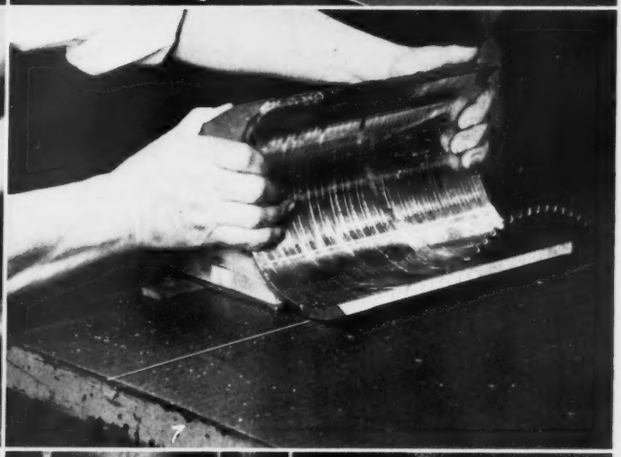
Note that the dividing rules now run to the edges of the finished plate, giving a definite guide for making chisel marks (*Fig. 5-E*) which are used as guides for sawing the plate and the segments.

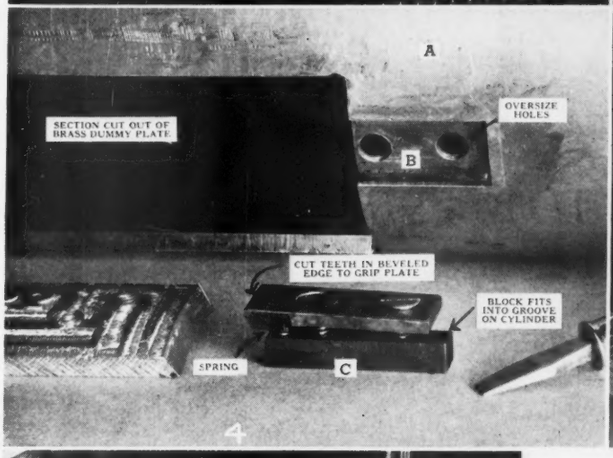
Fig. 6 is a jig for holding the plates in position while sawing them apart. It is

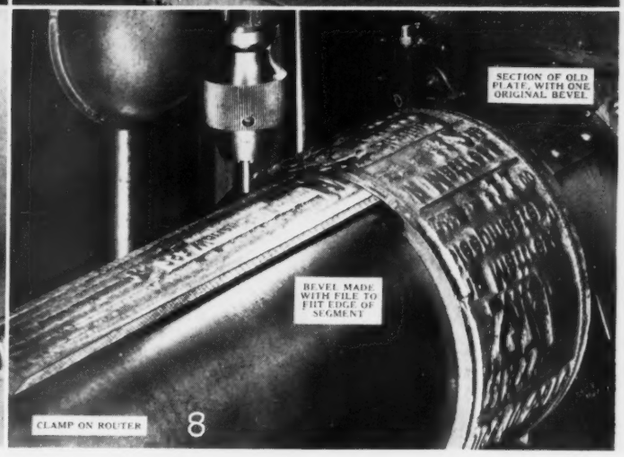
Editor's Note.—The author of this and other articles which will appear from time to time in *Printing Equipment Engineer*, is an old-time New England printer, who worked his

way through every stage of letterpress printing since his apprentice days on a small country weekly in 1897. He is now directing a modern plant devoted to high-speed production of newsprint circulars. During the past 43 years, as journeyman and executive, Mr. Goodman has developed many profitable, labor-saving ideas.









made of blocks of hardwood screwed to a steel plate, which in turn is fastened to a beveled guide plate that fits into the guide-groove on the saw table.

Fig. 7 shows the process of sawing the plates into segments. Note that chisel marks on the front edge of the plate line up with the saw groove on the saw table. This is all the guide needed to insure uniform cutting. It is well to first cut the tubular plate in half on one of the chisel marks, and then saw the halves into segments according to the imprints on the face.

Fig. 8 shows how to handle the sawed-up segments on the routing machine. Inasmuch as the clamp on the router will not close in to hold an 11 in. segment, a section of an old plate is used to make up the difference. In this old plate a bevel has been filed to receive the beveled edge of the imprint segment. Of course, the opposite edge of this old plate has the original bevel, which fits snugly into the bevel of the routing machine.

All that is necessary now is to build a suitable rack for keeping the imprint segments in order. GB-NP uses a 12 in. board with sheet metal dividers, about ¾ in. apart. Several of these are built up to form a neat filing rack.

Pressroom, 24 ft. wide, 148 ft. long, by 31 ft. deep excavated below old press reel room floor from solid sandstone in plant of Sydney (Australia) Morning Herald — *Delicate engineering job concluded successfully*

AN unusual engineering problem confronted the executive personnel of the Sydney (Australia) *Morning Herald* when considering the installation of 18 London-made Hoe press units with complementary plate-making equipment. The problem confronting the *Herald* management was how to install the new equipment in its present building without disrupting production of the present printing and plate-making facilities until after the new equipment had been installed. Usually, the procedure would be to purchase a new site and erect a new building in which to house the new equipment. In the instance under discussion here, legal reasons prohibited moving the *Herald* to another location.

Because present ground floor and basement area do not permit installation of additional equipment, it was finally decided that the only direction in which the building could be expanded was downwardly. Downward excavation meant that a huge cavern-like sub-basement immediately under the basement housing the present presses would have to be cut from solid sandstone.

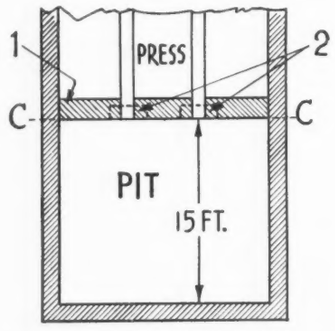


Fig. 1—*Plan view diagram showing end of press in plant of Sydney (Australia)* Morning Herald. *In order to excavate underneath the present presses and provide a new support for the press in place of the natural rock, a pit extending 15 ft. from one end of the press to the wall was excavated to a depth of 12 ft. At* 1 *is indicated one of the large 24 ft. I-beams, 60 of which were placed under the press to form a new permanent support. The dotted lines* 2 *represent the points where the rock was chased for the temporary support afforded by two stub columns indicated at* 3 *in Fig. 2.*

The problem of removing 110,112 cu. ft. of solid rock to provide a room 24 ft. wide by 148 ft. long by 31 ft. deep underneath the presses now in use demanded the highest architectural and engineering skill plus ingenuity for its solution. The excavation operation has required 18 months time, much of it continuing day and night.

Delicate Engineering Task

The delicate part of providing a new pressroom sub-basement consisted in excavating underneath and substituting an entirely new floor and supporting means for the present presses and reel room without, as stated above, interrupting daily production. Printing plant executives will readily understand that the slightest sag in the support for the heavy presses would throw them out of alignment—and this would mean production trouble.

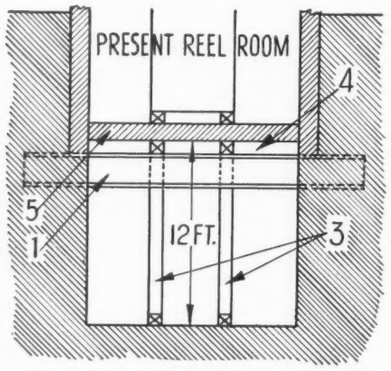


Fig. 2—*Cross-section diagram taken at line* C-C *in Fig. 1. One of the large 24 ft. permanent press supporting beams is indicated at* 1; 3 *represents the two stub columns used for temporary press support;* 4 *is space between old floor* 5 *and top of I-beam* 1. *Sixty of the I-beams were placed one at a time beneath the existing presses. As each beam* 1 *was placed in position, the architect calculated the load to be carried by each beam. By means of cable and turnbuckle rigging, each beam was predeflected before taking out the temporary stub supporting columns* 3. *Report has it that the calculations were so accurate that a discrepancy of not more than 0.001 in. was noticed in any one of the 60 beams after the press weight had been transferred from the temporary stub columns.*

The work was supervised by Director E. R. Bradshaw of Stuart Bros., Inc., the builders; H. R. Smith of Morris & Smith, consulting structural engineers and W. W. F. Denne, Sydney *Morning Herald* Superintendent.

How the press load was transferred from the old floor to 60 cross-beams will be described with the aid of Figs. 1 and 2 and the accompanying halftone layout.

The first operation consisted of excavating a pit 12 ft. deep at one end of the press reel room, as shown in Fig. 1. The pit extended 15 ft. from one end of the existing press to the wall. Then below the end of the press foundations the rock was chased, as at **2**, Fig. 1. Under these smaller excavations were placed two stub columns, shown at **2** in Fig. 2 and also in picture No. 2 the accompanying halftone layout. These two stub columns were then grouted up (cemented) to carry the press load.

How It Was Done

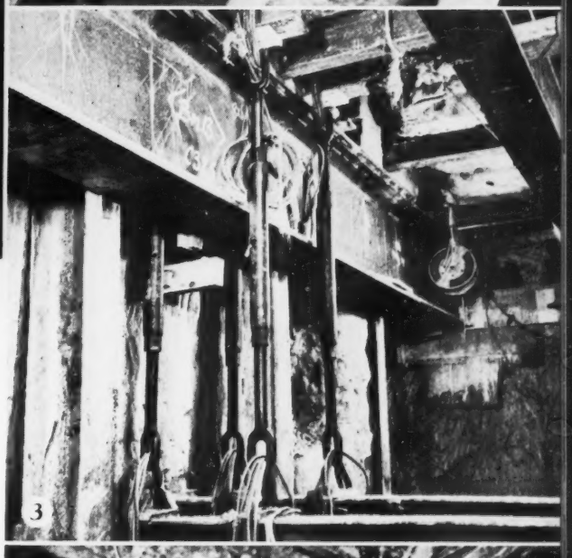
To make it possible to install the first of the 60 permanent cross-beams, enough rock was removed under the old floor at the end of the press to provide space for installation of the beam. These new compound steel beams stretch across the full 24 ft. width of the excavation, **1**, Fig. 2, and the ends are embedded in solid rock. Each of these beams are approx. 24 in. high by 7½ in. wide, with 12 in. and 14 in. steel plates welded to top and bottom for additional strength.

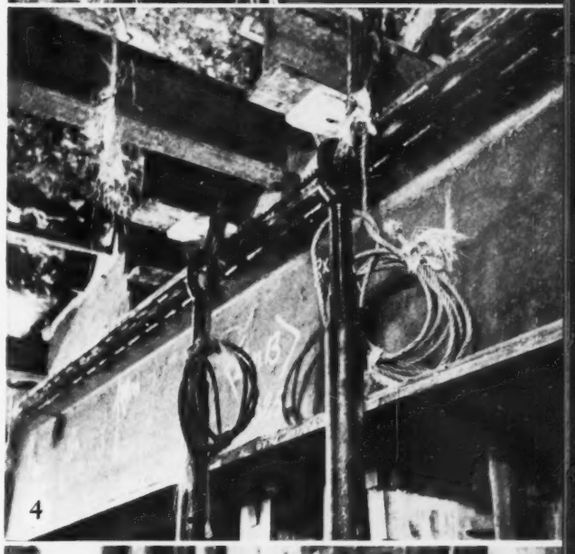
The two stub columns mentioned above, were put in place in the excavation. Then the new 24 ft. beam was installed, predeflected and the press load was transferred to the beam. Installation of each of the 24 ft. beams was completed before any further excavating was done. After each beam was installed as described above, a new excavation was made and the same two stub columns were again set up in new position for installation of the next 24 ft. beam. This process was repeated 60 times.

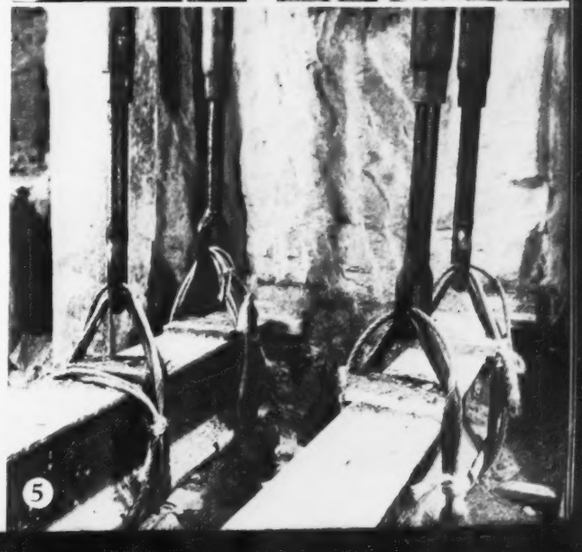
Upon looking at Fig. 2 you will note that the permanent supporting beams **1** are positioned below the old reel room floor with a space **3** between. This space was utilized by the architect in providing room for deflecting the beams, since all beams deflect when loaded. Now, if the beams were not properly pre-deflected, it might result in throwing the heavy vibrating press out of line to such an extent that production would be stopped or interfered with seriously.

The architect calculated the load to be carried by each beam when the weight of both press and floor were let down upon the beam so there would be no settlement whatever.

This was done by a very ingenious method and is shown in the halftone pictures Nos. 3, 4 and 5. Across the floor of the pit he anchored temporary steel beams. (The tops of these beams are shown in halftone picture No. 3. The top beams may also be seen in this picture.) Steel cables were then looped around beam **1**, Fig. 2 and the anchored tempo-







rary beams on the floor. The cables were connected by huge turnbuckles.

Halftone picture No. 4 illustrates method of trussing beam **1** in Fig. 2. Halftone picture No. 5 shows how the beams anchored to the floor served as the lower connection for the turnbuckles.

Dial gauges, indicating movement in thousandths of an inch were used to measure to calculated deflection of the beams as they were pulled down by the turnbuckles. After each beam had been deflected, the space **3** between the beam **1**, Fig. 2 and the floor was grouted in. After the cement had hardened sufficiently, the stub columns **2**, Fig. 2, were removed.

Deflection and grouting in of each of the permanent beams and the consequent removal of the temporary stub columns was executed by the "step and repeat" process 60 separate times. Calculations were so accurate that a discrepancy of not more than 0.001 in. was noticed in any one beam.

After the 60 steel beams had been grouted permanently into place, the associated engineers felt that the most difficult part of their work had been completed. It was a relatively simple engineering task to underpin a portion of the building and excavate the remaining area for the new pressroom, even though the excavation work must be done in sandstone.

Safeguarding the Foundations

The next problem was to insure that four of the building columns, each carrying a load of 600-700 T. were safeguarded. Massive steel and concrete underpinning employed actually increased stability of the columns. It was necessary, too, to employ shoring beams to resist the lateral pressure of the sliding action of rock heads which tended to slide off from the sides of the excavation.

In spite of the solidity of the rock, a certain amount of water seeps into the excavation. This seepage is controlled by installing a drainage system and a sump at each end of the excavation, from which the water is pumped to the storm drains by automatic float-controlled pumps.

New Equipment

The *Herald's* modernization program, when completed, will represent a considerable money investment, but the new machinery will be modern in every respect. The new 18 units of Hoe London-made presses, of which a 12-unit line is now installed, consist of four sextuple presses with 15 in. plate cyl. diam. and 23 9/16 in. cutoff. The other six units to be installed soon will make a double sextuple press of the same size. The previous cutoff was over 27 in.

(*Continued on Next Page*)

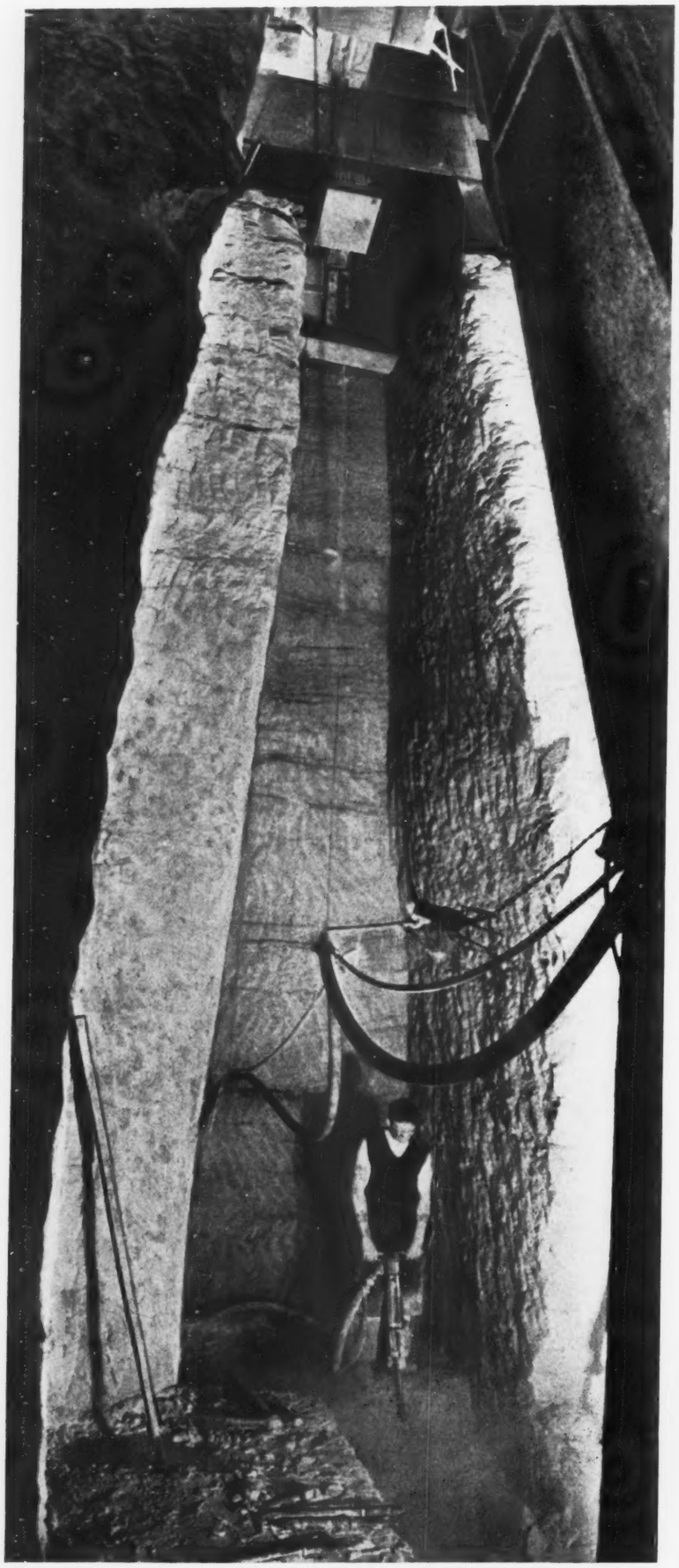
1—*View of general excavation work underneath present presses in plant of Sydney (Australia)* Morning Herald. *The strong I-section cross-beams at the top (60 of them) were installed to support the present press equipment before proceeding with the excavating work for the new press room.*

2—*This picture illustrates the stub columns employed for holding up the press temporarily while the permanent supporting beams in No. 3 picture were being pre-deflected.*

3—*This view shows permanent supporting beam under the present press being deflected by the turnbuckle arrangement. Dial gauges were used to measure the amount of deflection which would be exerted when the weight of the press rested upon each one of the 60 beams.*

4—*Shows how the permanent beams were trussed up for pre-deflection by the turnbuckles.*

5—*This view shows temporary beams anchored to the floor and to which the lower ends of the turnbuckles were attached by steel cable.*



This view will give the reader some idea of the difficulties attendant upon excavating a press-room 31 ft. into solid rock underneath the present press in plant of the Sydney (Australia) Morning Herald. *To prevent dust from the drill, a water jet was used.*

The presses are equipped with Witton-James reel stands and Autopasters (the latter made under Wood license). The 60 h.p. drive per unit, supplied by Witton-James, will enable the *Herald* to print 50,000 copies per hour. Electric power is 3 ph., 50 cy., a.c.

Auxiliary electric power supply has been provided for by installation of a 7 cyl. super-charged Diesel motor, manufactured by Mirrless, Beckerton & Day of Stockport, Eng. An 800 k.w. alternator supplied by General Electric of England, also has been installed.

Auxiliary press equipment in the way of paper conveyors were furnished by Igranic Electric Co. Two double plate lifts (stereotype plate elevators) are used for delivering plates between the press-room and stereotype foundry.

New stereotype equipment includes one complete Autoplate, one double Junior Autoplate, and new casting equipment to fit existing Double Junior Autoplate pot. All casting boxes will have vacuum backs. Other stereotype equipment furnished by Linotype & Machinery, Ltd. (Associated English company of Mergenthaler Linotype Co.), includes three Autoshavers, three curved plate routers and three electric dryers.

Blue Preferred, Says IPI

Gentlemen prefer blue, according to a survey just completed by International Printing Ink in an effort to determine the color which brings in the most direct mail inquiries. To a list of 6000 printers, publishers, advertisers, and others—all men—IPI sent a letter and attached a mailing card. Seven different colored cards were used, divided equally on an alphabetical basis so that each colored card went out to the same number of men. The incentive to mail back the card was an offer of a free brochure describing new developments in the application of color and chemical coatings to industry.

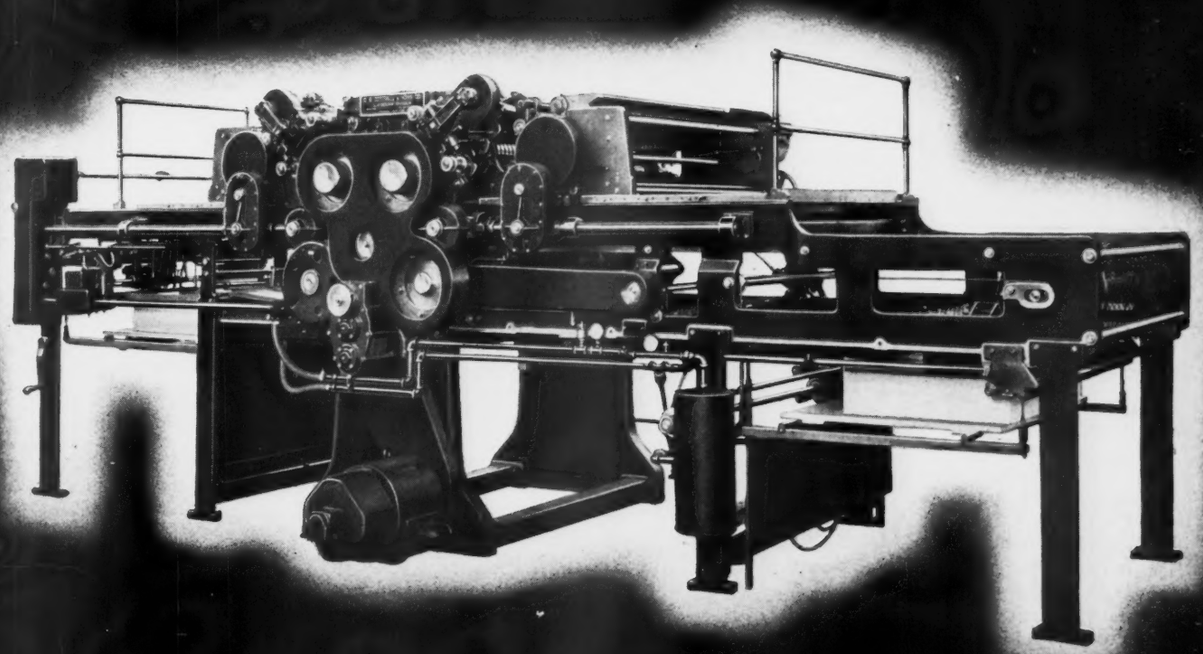
The mailing produced a return of fifteen per cent.

A final tabulation indicates that more blue cards were sent back than cards of any other color. It led the next most popular color, orange, by nearly 25 per cent. Then followed red, yellow, buff, green and white, in that order. It is interesting to note that all of the colors "outpulled" white. Blue, the best color, outpulled white, the poorest, by about 50 per cent.

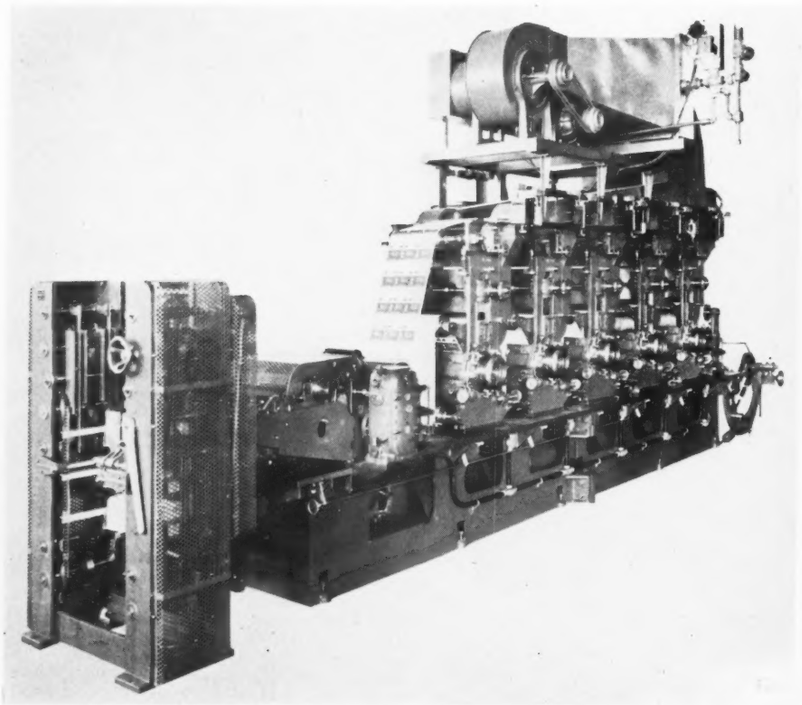
The mailing list included some residents of Latin America, and oddly enough, the Latin temperament seemed to be reflected in the returns. The Latins inclined towards red.

The results of this survey should not necessarily be considered conclusive, it is pointed out. IPI plans to continue its surveys to determine what colors are most effective in direct mail and printed advertising.

Send for this new folder



EQUIPMENT *and Supplies*



Champlain Five-Color Gravure Press

A five-color rotogravure press, which prints a maximum web width of 16 in., has recently been completed by the Champlain Corporation of Garfield. The press is adapted for label, wrapper or carton production.

The press consists of five standard printing units, a rotary sheeter, stacker delivery, reel carrier, pull and feed units, etc. The five printing units may be used for printing either five colors, or four colors with an overprint spot gloss. The rotary sheeter and slitters, which are adjustable to various lengths and widths, fabricate the printed web into the desired size. The sheeter operates at speeds averaging 300 cuts per min. At this rate, with three impressions across the web, 54,000 finished wrappers or labels per hour are delivered.

By assembling a rewind or punch unit on this press, in place of the rotary sheeter, the printed material may be delivered in rolls or as died out, scored and stripped carton blanks.

Ink fountains are the Weiss-Speedry fully enclosed type.

Super-Display Mixer Linotype

Mergenthaler Linotype Company announces a Blue Streak Super-Display Mixer Model 35 Linotype for the commercial printing plant and the newspaper ad alley. Manufacturer states the machine can be used for producing straight or mixed composition from 5 pt. up to full-width 36 pt. The same model machine fitted with auxiliary magazines will be known as the Model 36.

Wet Strip Film Adhesive

Joel J. Gottlieb, manufacturer of chemical specialties, announces a wet strip film adhesive for the photo-engraver. This synthetic adhesive is specially made to compel film edges to stay flat on the glass indefinitely or until removal from the glass is desired. Moistening with water will permit removal of the film. Manufacturer states the adhesive is water soluble, is bacteria proof and will not develop mold or odor.

Acid-Free Matrix Cleaner

Delgass Laboratories, Inc., announces the formation of a Graphic Arts Division to market a machine process for cleaning matrices, magazines and other line-casting machine parts. Organized for chemical research, the Delgass Laboratories have for some time been engaged in studying the solution of problems facing the printing industry.

The Delgass matrix and magazine cleaning process employs a solution said to contain no acids or other chemicals injurious to brass or other metals. The solution is a combination solvent, detergent and brightener and has been named Delgass No-Etch Matrix Cleaner. The makers claim the cleaner will rid all portions of matrices, magazines and other machine parts of foreign matter, leaving the surfaces clean, bright and unharmed in any respect.

A machine to be used in the Delgass Process has been developed. It embodies principles that intensify the mechanical action of the cleaning solution and the rinse waters to an extent that could not be achieved by a machine in which a rocking motion is utilized.

The Delgass process will be exhibited and demonstrated at the A.N.P.A. Mechanical Conference in Buffalo. Officers of Delgass Laboratories, Inc., are B. W. Delgass, President; W. Dessner, Vice President; M. D. Knies, Treasurer.

Infra-Red Heat Lamps

Three new infra-red heat lamps are announced by Birdseye Division of Wabash Appliance Corporation. Differing from incandescent lamps used for lighting, the filaments of the infra-red lamps operate at lower temperatures, developing infra-red radiant energy at wave lengths which have high penetration. The unique property of these lamps and of the infra-red radiant energy developed is the ability to penetrate deeply into the surface films of inks, lacquers, paints and enamels to start the drying process from the inside out. Some use already has been made of infra-red energy for drying proofs.

This illustration shows the three infra-red heat lamps announced by Birdseye Div. of Wabash Appliance Corporation. The lamp in foreground carries its own silver reflector sealed within the bulb. Lamp life is said to be 6000 hr.

Two of the three lamps announced by Wabash will be clear, for use with the standard gold-plated or Alzac reflectors, but the third will not require a separate reflector since it will be built with its own reflector lining sealed inside to keep it free from oxidation and the collection of dust, dirt and fumes. Manufacturer states the reflector lining will keep heat-reflecting value for the 6000 hour life of the bulb because it is made of pure

The best recommendation for Satin Proof is the big repeat business on this finest of all Champion coated papers. Closely formed raw stock and excellent coating material give Satin Proof the feel as well as the unmistakable look of quality. Its remarkably smooth surface and bright white color make Satin Proof particularly well suited to fine catalogues and direct mail pieces that feature high quality products. Try it on the next job you want to make outstanding. The customer is sure to give you orchids of praise that will show up in your profits.

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MILLS AT HAMILTON, OHIO . . . CANTON, N. C. . . . HOUSTON, TEXAS

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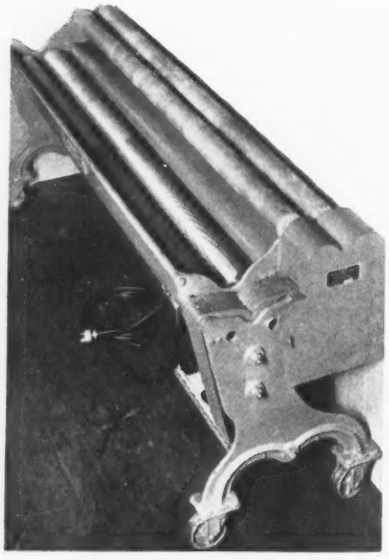
silver which will be sealed inside the gas-filled bulb.

Complete information on Birdseye heat lamps and drying with infra-red radiant energy is contained in bulletin No. 121B. Address the company direct or in care of *Printing Equipment Engineer.*

Roller Cleaner

The Hi-Speed Roller Cleaner recently announced by Printing Press Parts and Supplies, Inc., is said to be the means for eliminating the washing of printing press inking rollers by hand. No wiping cloths



View of Hi-Speed Printing Press Roller Cleaner announced by Printing Press Parts and Supplies, Inc.

are required and it is stated that the solvent (preferably kerosene) can be used repeatedly; rollers with inks of different colors can be cleaned in the machine containing the same solvent quickly so that the time lost in changing colors on a press is shortened materially.

The Hi-Speed Roller Cleaner is provided with a self-contained motor. The machine can be moved about the press-room to suit convenience. Takes any size roller in any length up to 72 in. without adjustment for varying roller sizes.

In operation, a printing press roller is laid upon the lower pair of cleaning machine rolls shown in the illustration. These rolls are threaded in such manner that a slight oscillating action is imparted to the press roller. After being given the first cleaning operation, the press roller is then laid upon the upper pair of rolls for the final cleaning.

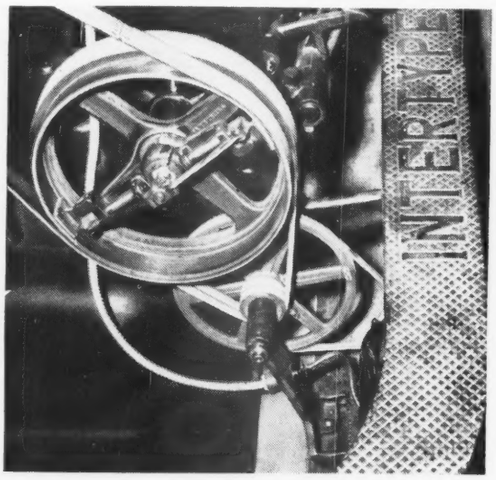
Bearing Bronze

Catalog No. 410 has been published by Johnson Bronze Co. Fully illustrated, 76 pages. In it are illustrated and described — plain bearings, new types of electric motor bearings, bronze stock, cored bars, self lubricating bearings, and the like.

Barrymill Drive

Circle Equipment Company states the Barrymill Drive may be used in conjunction with any standard make 1/3 h.p. motor having a speed ranging from 1725 to 1775 r.p.m., and of any voltage a.c. or d.c., for driving line-casting machines. It may be used also to operate a machine at slower-than-normal speeds when casting borders, rule and base material, to eliminate hollow-base slugs, caused from too rapid casting. Operating speeds can be changed from 4 to 9 lines per min. in 30 sec.

The Barrymill Drive is equipped with a variable pitch driving pulley by means of which the varying machine speeds are obtained. The unit is mounted on the ejector lever shaft extension under the machine step. Endless Vee belts used in multiple transmit motion. The unit is supplied with or without a motor.



View of Barrymill Variable Speed Drive attached to line-composing machine. The unit is used in conjunction with any motor having a speed between 1725 to 1775 r.p.m.

Strip Heaters for Embossing Machines

The Wilson-Jones Company of Chicago, manufacturer of loose-leaf binders and blank books, recently made an interesting application of General Electric strip heaters to its eight embossing and gold-stamping machines.

The stamping surfaces of these machines are heated to around 300 to 400 deg. F. The previous heating method employed small oval gas chambers located directly above the top plate of the press.

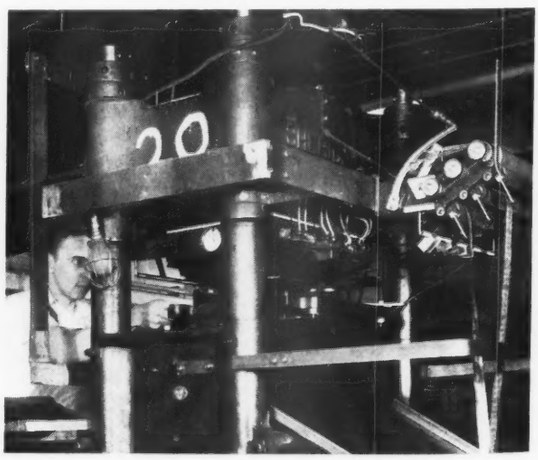
It was decided to use electric heat in the machines. A long, thin, rectangular tube was inserted into each gas-fired chamber. Into this tube General Electric strip heaters were placed. The area still left open between the outer wall of the tube and the walls of the chamber was plugged with babbitt.

With the electric equipment it is claimed the heating of the platens is speeded up considerably because the heating units are individually controlled, and in addition correct temperature is easily maintained.

Precision Lathe

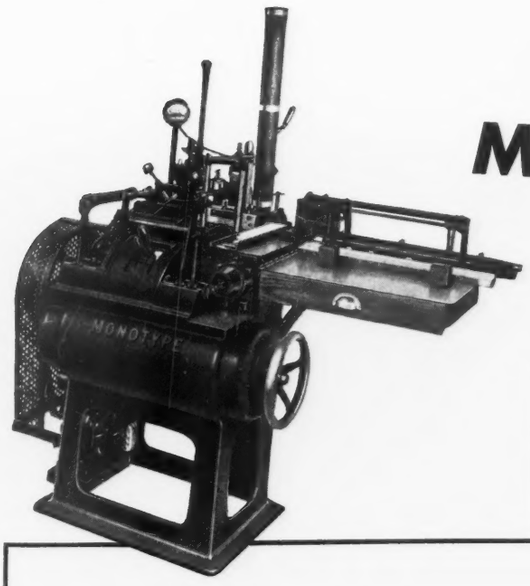
The Model A 9 in. swing Precision Lathe recently announced by the South Bend Lathe Works, is adapted for small diameter work requiring a high degree of accuracy and sensitivity. This lathe has a maximum collet capacity of ½ in., maximum swing over bed ways of 9⅛ in., and a maximum swing over saddle cross slide of 5½ in. Three bed lengths are available, providing center distances of 16 in., 22 in. and 28 in.

Twelve spindle speeds ranging from 41 to 1270 r.p.m. are provided on the motor drive models.



Electric strip heaters have been applied to the platens of the stamping and embossing machines in the Wilson-Jones plant, Chicago. In this illustration the strip heater terminals may be seen. The operator is feeding notebook covers into the machine for stamping and embossing.

THE MOST VERSATILE STRIP-MATERIAL MACHINE IN THE WORLD



The Monotype
MATERIAL MAKING MACHINE

Continuous-Strip Material

(Cast in Strips or Cut to Measure)

Straight-Line Rules—250 designs and sizes from 1½ to 18 point, inclusive.

Leads and Slugs—Either "high" or "low," in all sizes from 1 point to 18 point, inclusive.

"High" or "Low" Base—In 12, 18, 24, 30 and 36 point (strips 24 inches long).

Flush-Side and Full Face Rules—Cast flush on one or both sides; 1½ to 12 point body.

Want-Ad Rules—Special drive for resisting mat pressure; 1½ and 2 point.

Ornamental Borders—200 designs and sizes from 2 to 12 point, inclusive.

Wavy Rules—Several weights of rule face; sizes from 2 to 12 point.

Broaching Rules—With special shoulder, several weights and sizes.

Tie-Up Slugs—12 to 36 point, any desired height.

Electrotype Bearers—12 and 18 point. With firm name repeated, to identify foundry forms.

Single-Column Material

(Not Made on Other Continuous Strip Machines)

Leads and Slugs—1½ to 12 point, measures up to 15 picas in length.

Straight-Line and Want-Ad Rules—Many weights of face; 1½ to 6 point sizes; measures up to 15 picas in length.

Centered Dashes—A variety of designs and weights; sizes from 3 to 14 point; centered on measures up to 15 picas in length

Single-Piece Braces—Centered on measures from 4 picas to 15 picas in length.

Logotypes—Cast from slug-machine matrices in sizes from 6 to 18 point, centered on desired measures up to 15 picas in length.

Decorative End Rules—A variety of corner designs and rule faces in sizes from 3 to 6 point.

★

Write for Prices and Terms of the

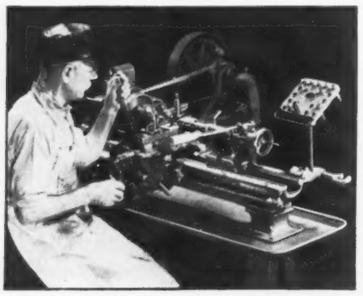
NEW IMPROVED MONOTYPE MATERIAL MAKING MACHINE

LANSTON MONOTYPE MACHINE COMPANY, *Philadelphia, Penna.*

Composed in Monotype 20th Century Family and Monotype Stylescript, No. 425

A series of 48 power longitudinal feeds, 48 power cross feeds and 48 pitches of screw threads, right or left hand, are provided by the quick change gear mechanism.

In addition to equipment regularly furnished, special electric grinding, milling and other attachments are available.



View of South Bend's Model A 9 in. Swing Precision Lathe — Max. collet capacity, ½ in.; Max. swing, 9⅛ in.; bed lengths, 16 in., 22 in., and 28 in.

The lathe is made in floor type with pedestal motor drive, also in bench type with motor drive, and in both bench and floor types with countershaft drive. All models are illustrated and described in Catalog No. 50-B, a copy of which may be had on request to the company or this magazine.

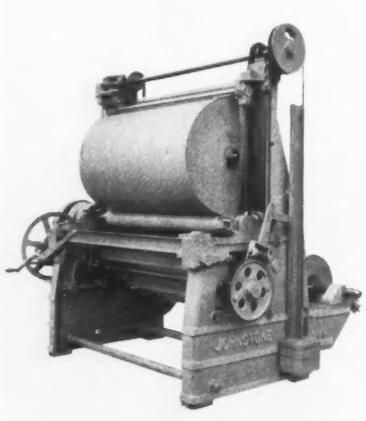
Johnstone Slitter and Rewinder

Johnstone Engineering & Machine Co. has announced the Johnstone Score Cut or Shear Cut Slitter and Rewinder in two models. These are called 12 and 14. The Johnstone Twelve slits and rewinds boards up to 20 points thick and all weights of papers down to 4 lb. condenser tissue; also fabrics of practically all kinds, gauze, imitation leather, rubber, rubberized fabrics, and so on, with straight, pinked or special edges. The standard size machines take rolls 32 in., 42 in., 52 in. and 62 in. wide.

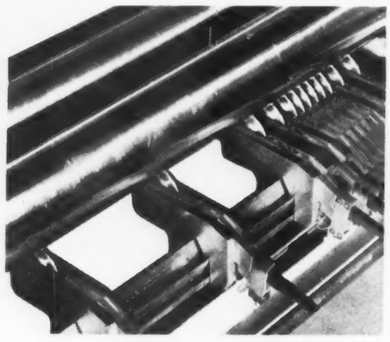
Operating speeds are dependent upon the material handled and the width of the roll, maximum being 700 ft. per min.

Standard equipment includes ten slitter levers. Standard slitters can be spaced on ½ in. centers. Special spacers furnished to suit individual requirements; special slitters can be spaced in ¼ in. centers.

The Johnstone Fourteen is similar to the Twelve except that boards up to 40 points thick can be handled. Its maximum speed is 1500 ft. per min. Standard size machines take rolls 42 in., 52 in., 62 in., 72 in. and 82 in. wide.



View of Johnstone Score Cut or Shear Cut Slitter and Rewinder. Slits and rewinds boards up to 20 points or 40 points thick, (according to model) and all weights of papers down to 4 lb. condenser tissue; also fabrics of practically all kinds.



Bearings of sealed slitters and underpoint springs of the tool steel slitter lever. Slitter bearings are completely sealed against entrance of dust or grit and against escape of lubricant.

Following are some of the features incorporated in the machine: (1) Ball or roller bearings used wherever possible; (2) Tool steel slitter lever for strength against breakage; (3) Sealed slitters protect against excessive wear; (4) Underpoint springs on slitter levers for stability; (5) Gliding pressure adjustment for slitter levers is easily operated; (6) Boomerang pressure release lever always returns to former position; (7) Obedient clutch immediately does what operator wants; (8) Dual purpose clutch control combines brake with shifter; (9) Floating pressure roll drive eliminates operating difficulties; (10) Balanced pressure roll; (11) One-handed pressure roll elevator simplifies operation, and (12) Hinged, split brake straps and mill roll clamp simplify roll changing.

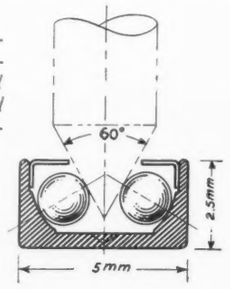
Further information may be obtained from Johnstone Engineering & Machine Co., direct, or in care of *Printing Equipment Engineer*.

Bases and Hooks

W. S. Warnock Co., 1524 Jonquil Terrace, Chicago, is promoting its line of bases and hooks by means of a blotter. The blotter is mounted with bristol board top. A section of the top is perforated for a postcard which may be detached and mailed to Warnock for information, literature and prices. Illustrated are diagonal and honeycomb base.

Self-aligning Pivot Ball Bearing

Miniature Precision Bearings (associated with Split Ballbearing Corporation) which are announced as furnishing anti-friction operation for radial and/or thrust loads. The most common use of these bearings is in opposed pairs, one of which is mounted with adjusting screw and lock nut, or other method of adjustment for end play which should not exceed a few thousandths of an inch.



Cross-section diagram self-aligning pivot ball bearing announced by Miniature Precision Bearings.

Pivot Ball Bearing No. 3P is of hardened high-carbon chrome bearing steel, highly finished on raceway and exterior surfaces; cap is of c.r. steel; o.d. is 5 mm.; width is 2.5 mm.; four 1/16 in. balls, plus or minus 0.000025 in., chrome grade 1; min. pivot diam., about 0.050 in.; max. is unlimited; allowable misalignment up to 4 deg. from normal.

LOAD RATINGS (lb.)

	1000 r.p.m.	5000 r.p.m.	10,000 r.p.m.
Thrust only ...	1.5	1.0	0.7
Radial only ...	0.6	0.4	0.3

Thin Line Electric Etcher

The small Thin Line Etcher for permanently marking tools and parts is announced by the Ideal Commutator Dresser Co. As is implied by the name, this etcher writes with a fine line, burning the mark, identification number or name into the metal, so it cannot become blurred or worn off with ordinary usage. All parts are fully enclosed and out of the way when not in use.

The Thin Line Electric Etcher is used like a lead pencil to mark tools and parts. Tool really is small electric hammer making 7200 minute cutting strokes per minute.

How to keep out of trouble

in connection with newspaper cylinder packings

IF YOUR TROUBLE is ghosting or bolstering . . . or blankets that creep on the cylinders . . . or excessive pounding down, unsatisfactory print, or too-high blanket costs . . .

WE CAN HELP YOU.

ESPECIALLY worth your attention is Vulcan's Non-Felt* Combination . . . the lowest priced two-piece combination on the market; and, according to many pressmen, the best of all cylinder packings, bar none.

*Completely protected by U. S. and foreign patents. Originated, developed, manufactured and sold exclusively by Vulcan Proofing Company

Write and tell us about your press blanket trouble and let us help you.

VULCAN PROOFING COMPANY, 1st Avenue and 58th Street, Brooklyn, N. Y.

Sales Representatives in Principal Cities

VULCAN

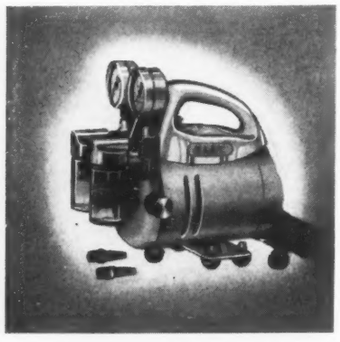
PRESS BLANKETS AND INKING ROLLERS

To mark tools and parts made of iron, steel and their alloys, the object to be marked must be placed on a metal work plate (inside cover of the case). The etcher tool is then held and used as if writing with a lead pencil.

The complete unit includes 9 ft. primary lead and plug, 2 oz. heat resisting hand piece with 3 ft. lead, 4 in. by 6 in. work plate, 115 v., 50-60 cy. standard. Other voltages and frequencies available. Etching heat, 125 w. Weight, 5¼ lbs. Size, 4¼ in. by 4¼ in. by 7 in.

Streamlined Vacuum—Pressure Unit

The streamlined model air pump shown here is being introduced by Gast Mfg. Corporation. Complete with 1/12 h.p. motor, all parts necesssry for both vacuum and pressure operation are contained in the integral unit. Large enough to operate artists' air brushes, it may be had in black metal finish for industrial use as a machine accessory. The vacuum pump is of the rotary type, operating without gears, springs or valves, and is asserted to be unusually efficient, vibrationless and quiet in performance. A slight adjustment converts pump from vacuum to pressure service. Pump and motor measure 8½ in. long by 4½ in. dia. and can be easily lifted and moved by the handle. Air capacity of the 5F5 is 0.5 c.f.m.



View of Gast streamlined model air pump — may be used for operating artists' air brushes.

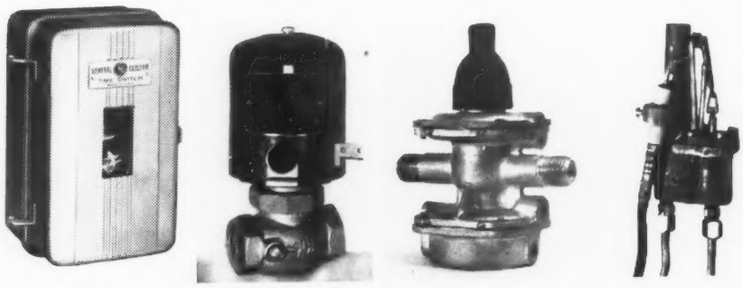
Auto-pilot Gas Control

The Hogan Company has announced the Auto-pilot, a completely automatic control for gas-fired melting pots used in the printing industry. Specifically, the control is applicable to composing machine, remelting, stereotype, and electrotype metal melting pots.

The control functions automatically to turn on and ignite gas burners and turn them off at predetermined intervals without disturbing the burner adjustments. This action takes place within the Auto-pilot itself, so that burner adjustments remain undisturbed from day to day.

Attachment to gas-fired metal pots is accomplished after installation of a few easily-applied brackets.

Four component parts go into the making up of the Auto-pilot. These are an electric clock, a motor valve, a safety valve and an ignition unit.



Component parts of Auto-pilot Gas Control for composing machine, stereotype, remelting and electrotype metal melting pots. The parts illustrated function automatically to turn the fuel gas on and off at predetermined intervals. From left to right are shown the time switch, motor valve, safety valve and the ignition unit which ignites the gas by an electric spark plug arrangement.

The *Turn-on Action* is as follows: The electric control-clock closes an electric contact within the clock to start the motor valve, which opens and allows gas to be admitted to the pilot burner. At the same moment gas pressure (through a sealed diaphragm) operates an electric contact within the safety valve, which causes a spark-plug to emit sparks to ignite the pilot-burner.

The pilot-burner flame burns 10 to 15 sec., when an expansion valve opens to admit gas to the main burners of the melting pot.

The pilot-burner flame must be burning *before* gas is admitted to the main burner; this control makes the mechanism inoperative if either the gas supply or electric service is absent. However, Auto-pilot acts immediately when service is restored.

Turn-off Action.—The electric control-clock opens an electric switch within the clock, cutting off electricity to the motor valve, which closes (by clock-spring action), shutting off the gas supply to main burner and pilot light. The main-burner flame and pilot-burner flame now die from lack of gas. Due to lack of heat, a metal strip contracts, shutting off a gas valve between the safety valve and the main burner.

IPI Personnel Notes

Dwight L. Monaco has joined the sales organization of the International Printing Ink Division of Interchemical Corporation and will be located in the New York office. Before joining IPI, Mr. Monaco was manager of the printing division of the Kalamazoo Vegetable Parchment Co.

Frank Wright, who is in charge of the manufacture and development of lithographic and tin printing inks for the Eastern Division of IPI, has transferred his headquarters from the New York branch to IPI's Brooklyn factory.

Alphabet Showings for Layouts

New Radiant alphabet showings have been issued by the Ludlow Typograph Company especially for use by layout man. These four folders, each printed with a different two-color front page, show complete alphabets, figures, and other characters available in each size of Radiant Medium, Radiant Bold, Radiant Bold Extra Condensed, Radiant Heavy.

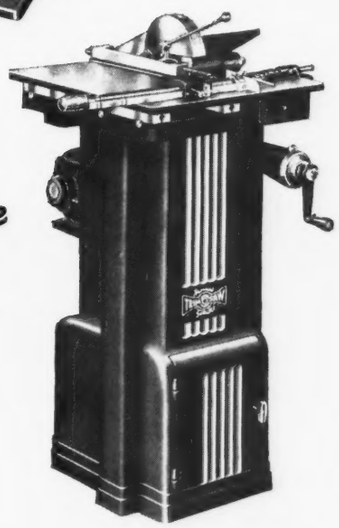
In using these folders, the layout man can trace directly over the individual letters to establish exact fitting in his layouts. The folders are printed on stock heavy enough to withstand extensive use.

Sets of these folders showing the Radiant alphabets may be obtained by writing on your business letterhead to the Ludlow Typograph Company.

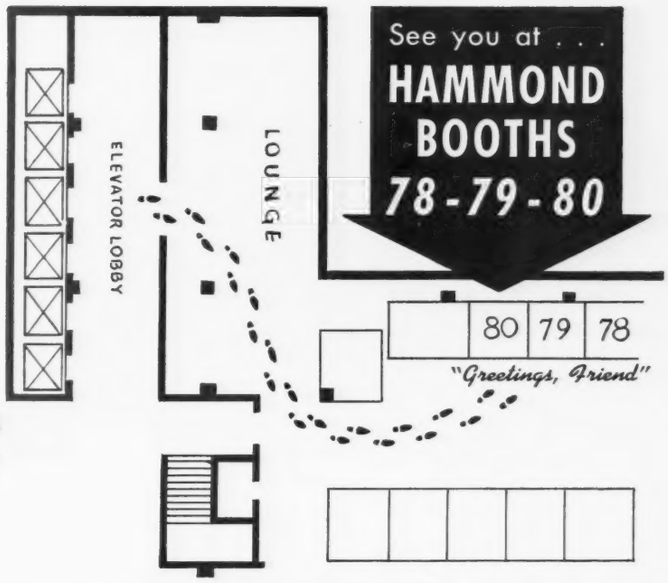
Layout men may use Ludlow's new Radiant alphabet showings for tracing purposes. Complete alphabets, figures and extra characters appear on the heavy stock.

See the
HAMMOND EASYKASTER "8"

See the
HAMMOND RADIAL ROUTER



See the
HAMMOND MERCURY TRIMOSAW



We'll be . . .

Just Around the Corner at the ANPA SHOW... June 9 • 10 • 11 at the Hotel Statler in Buffalo

Modern equipment will be the keynote this month as printers from Vermont to Washington gather in Buffalo for the annual ANPA Mechanical Conference.

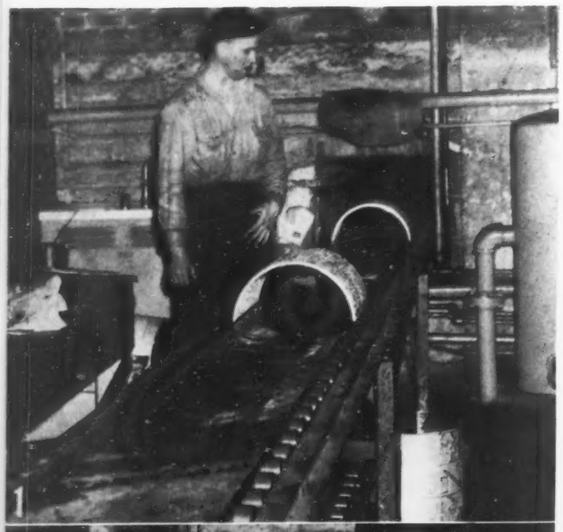
And waiting to greet you . . . just a few short steps from the elevator . . . will be Hammond's friendly representatives. Ready to show you what's new in modern composing room saws, routers and stereotyping equipment . . . and how they can help you get cleaner-cut, more beautifully printed pages with minimum time and effort.

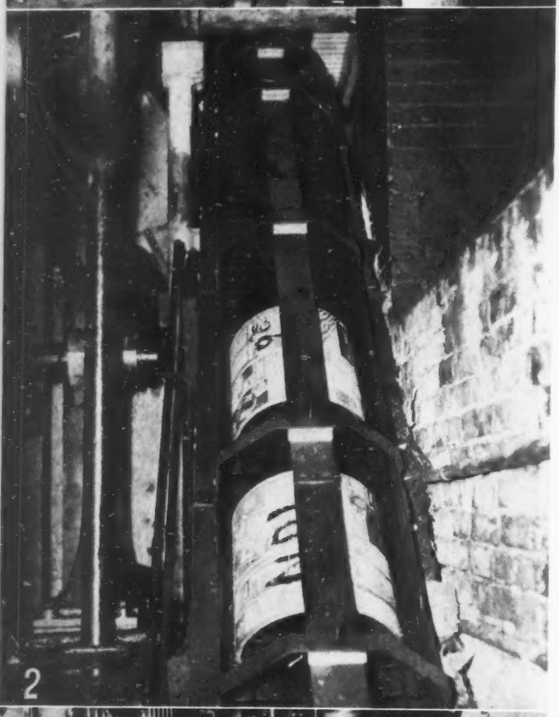
At left you see some of the equipment HAMMOND of KALAMAZOO will have on the floor. Come in . . . see these new machines working as they would for you . . . in your plant. You'll take back a lasting impression of modern efficiency.

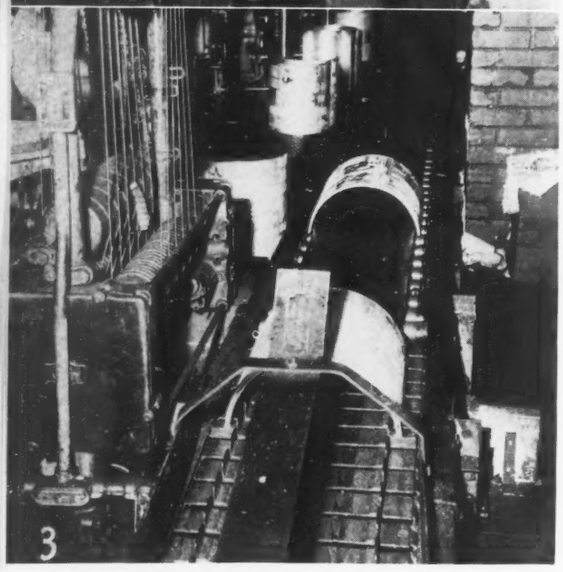
But . . . if business won't let you get away for the Show . . . drop us a line. We'll gladly send you prices and information on the machine that interests you.

Hammond of Kalamazoo

HAMMOND MACHINERY BUILDERS, INC.
1604 DOUGLAS AVE. • • • KALAMAZOO, MICHIGAN
Eastern Branch – 71 West 23rd Street, New York City







212 Foot Conveyor Delivers Plates Via Underground Tunnel

By W. W. WEVER*

*Mechanical Superintendent, Atlanta (Ga.) *Journal*.

UNUSUAL newspaper plant area and facilities sometimes create an unusual condition which may slow up production. Under these circumstances, of course, ways and means for eliminating the bottleneck must be found. Such a condition arose in 1939 when the present ownership took over and consolidated the Atlanta *Georgian* with the *Journal*.

The consolidation made it immediately necessary to provide increased press facilities. The press equipment could not be accommodated in the present *Journal* quarters. To house the 12-unit press, 4 pairs of folders and 6 deliveries which were to be installed, a garage building across a court was leased. In addition to housing the in-line 12-unit press, the newly leased building provides ample room for the mailing department and considerable paper storage space.

Separating the pressroom from the stereotype department in the *Journal* building by locating it in an adjacent building made it necessary to supply a means for automatically transporting plates from the stereotype department to the pressroom across the 70 ft. court. The court, by the way, is used by trucks for delivery of papers from the mail rooms of both buildings.

To automatically deliver the plates from the stereotype foundry to the pressroom, a Jampol roller chain conveyor was installed. The conveyor extends from the stereotype department in the *Journal* building, drops down under the 70 ft. court paving and rises again to run the entire length of the 12-unit press, a total distance of 212 ft. Those angled sections of the conveyor which drop from the stereotype department and pressroom under the court paving are supplied with paddle treads which hold the plates in fixed position while they are negotiating the inclines.

The 7½ h.p. and 5 h.p. conveyor driving motors are reversible so the plates may be returned to the stereotype department.

1—This roller chain plate conveyor extends from the Atlanta Journal's *stereotype department, dips down and carries the plates through a tunnel 70 ft. long under a court and then delivers the plates alongside the paper's 12-unit press in an adjacent building. Total length of conveyor is 212 ft.*

2—The section of the conveyor which brings the plates up out of the 70 ft. tunnel is inclined and the paddle treads together with cleats prevent plates slipping backwardly down the incline.

3—At the top of the conveyor incline, the conveyor operates at press bedplate level. Conveyor extends alongside the full length of the press. After run has been finished, the conveyor motors are reversed to return the plates to the stereotype department.

EXECUTIVE ¶s

Guy Aycock, formerly with the Chattanooga (Tenn.) *Times*, has recently taken the position of Mechanical Superintendent with the West Palm Beach (Fla.) *Post & Times*.

Principal R. Randolph Karch of Cincinnati's Printing High School, spoke on *Craftsmanship in Action* at the Ninth District Craftsmen's Conference in Dallas, Texas, on April 26. In addition, he was chairman of a composing room clinic during the conference.

Litho and Offset Rollers

First, Second and Third Ideal is the title of a four-page lithographed folder published by Ideal Roller & Mfg. Co. In it are allocated the types of work which may be accomplished with the various rollers.

Speaks Before Nashville Club

A. T. Walker, Central District Sales Manager of the Harris-Seybold-Potter Co., spoke on offset printing before the Nashville Club of Printing House Craftsmen, on April 23. Supplementing his speech was a movie presenting the offset process in detail. Movies taken in South America by M. L. Mann, manager of the company's Atlanta branch, were also shown.

Government Printing By Private Plants

Public Printer A. E. Giegengack of the U. S. Government Printing Office has issued a booklet entitled *Questions and Answers on Contract Printing for National Defense*. In the booklet are answered the numerous questions relative to securing Government Printing and the procedure entailed. Printing plant executives wishing to have a copy of the booklet may secure it from the Government Printing Office, or members of the National Advisory Committee consisting of trade association executives.

NEW YORK
Herald Tribune
LATE CITY EDITION
Turkey Reported Rejecting Hitler's Help And Refusing to Mediate Greek War; British Sever Relations With Bulgaria
Amendments Roosevelt Says U. S. Is Facing Up Today in Worse Crisis Now Than in 1933 Aid Bill Fight
Britain Shifts British Navy Up to Million Raids Island Into War Jobs Near Norway
Rendel Hints Bombing by R.A.F. Of Germans in Bulgaria Soon

1941 Ayer Cup awarded to the New York Herald Tribune, printed exclusively with Huber News Ink

9 *out of* 11

WINNERS OF THE AYER AWARD

HAVE USED HUBER INKS

Again, for the 9th time in 11 years, the Francis Wayland Ayer Cup has been awarded to a paper using Huber ink . . . the New York Herald Tribune. Honorable Mention, as well, has been awarded this year to these other leading papers using Huber news inks: Richmond (Va.) Times-Dispatch, First Honorable Mention for papers of more than 50,000 circulation. • The New York Times, Second Honorable Mention for papers of more than 50,000 circulation. • Washington News, Third Honorable Mention for tabloids.

. . . and First in the Tabloid Division

Printed exclusively with:

PM
5 cents
Deportation For Jan Valtin?
His Book-of-the-Month Club Best Seller May Prove Own Accuser in Forcing Justice Department to Act
Hitler's Arguments Through The Mouths of U.S. Senators
COMPLETE EDITION

HUBER VELO COLD SET INK

AND PRINTING PROCESS

(REG. U. S. PAT. OFF.)

The Printing Ink of Tomorrow Commercially Proved Today!

HUBER PRODUCTS IN USE SINCE 1780

Craftsmen Hear Goudy, Collins, Groet, Kimball and Others

ON Saturday, May 10, Craftsmen to the number of 150 assembled in Gloversville, N. Y., for the Second District Conference.

John M. Collins, of American Type Founders, spoke on *Modernization of the Composing Room*, and discussed the essentials necessary to make it possible to operate a composing room efficiently. John T. Groet of the Eastman Kodak Co., discussed *Photography in Printing. Impressions* was the subject discussed by Norm Kimball of the Martin Cantine Co.

Thos. A. Pape, International Second District Representative, was present. Edward L. Bovee, superintendent of the Commercial Printing Dept. of the *Morning Herald* and *Leader-Republican*, was general chairman of the conference. Officers of the Adirondack Club are: President, Francis J. Dennis; Vice President, Keith Blake; Secretary, Wm. L. Reinhart, and Treasurer, Elwood Yeaple.

At the evening banquet, International Third Vice President Harvey Glover introduced Frederic W. Goudy who spoke on *Type and Its Design.* In part, he said:

"For nearly 40 years I have preached the gospel of simplicity, of dignity, of legibility, of beauty in types and typography and only now am I beginning to feel that my words and thoughts so freely dispensed through the years — those arrows of typographic thought shot into the air — have not fallen to earth unnoticed and disregarded.

When a man skillful with his hands produces things and talks with candor about his methods of work, he usually is worth listening to, but though he knows his work thoroughly that does not necessarily qualify him to write or speak of it interestingly. He must have something else beside deftness and a technical knowledge. He must have a logical sense, a feeling for richness in words, an appreciation of their sounds and their rhythmical sequences as well — he must learn to write or speak intelligently of his work even as he learned his methods of work by study and practice.

"The type designer by nature may be apt, but that fact will not of itself prevent anachronisms; he must know the history of letters, the development of types from Gutenberg to the present, the designs that have been done by others, and he

Frederic W. Goudy spoke on Type and Its Design *before the Second District Craftsmen's Conference banquet, Gloversville, N. Y., Saturday, May 10. Left to right at the speakers' table are: President Frank Dennis of the Adirondack Club; Norman Kimball, Frederic W. Goudy and H. M. Brower.*

The BIG WORD

In Plate Mounting

Blatchford BASE

E. W. BLATCHFORD COMPANY — A TOWER of STRENGTH — EST'B. 1854 INCO. 1890

CHICAGO 900 West 18th St. E. W. BLATCHFORD CO. NEW YORK 63 Park Row

The BIG WORD

In Type Metals

Blatchford METAL

CHICAGO
900 West 18th St.

E. W. BLATCHFORD CO.

NEW YORK
63 Park Row

must possess too, the ability to seize upon in his work, the things he needs in his own — the quirks and turns that have caught his attention and fired his imagination, not however, to copy or imitate them, but to fuse them in the fire of his own thought into new type creations.

"I do not consider myself a printer nor even a typographer although occasionally I do print, but I have studied assiduously the work of the great printers and of the great type designers of the past. I studied that I might pursue my own work intelligently.

"If only there might be some definite and positive item that one could introduce into a design which would ensure its legibility or its beauty. Qualities alas, are more often the result of accident than of deliberate and conscious effort, and I speak with the experience of years and over a hundred types to my credit as a basis for the statement. If such qualities could be introduced simply by taking thought, there certainly would be fewer bad types, since who would be so foolish as to draw any not good.

Line-composing Crucible Maintenance Bulletin

William Reid Co. has published an illustrated bulletin describing its service for overhauling line-composing machine pot crucible wells, plungers, mouthpieces, etc. Also described are tools and repair parts for doing the work in your plant.

Further Details on 20th Conference

MORE than fifty speakers and discussion leaders will take part in the program of the 20th Annual Conference on Printing Education, sponsored by the National Graphic Arts Education Association, to be held at the Hollenden Hotel, Cleveland, Ohio, June 29-July 2, 1941.

Here are some of the leading topics, geared to fit in with the general theme of the Conference "Graphic Arts Education for the Common Defense":

The Place of Graphic Arts Education in a Program of National Defense by Harry L. Gage, Vice President, Mergenthaler Linotype Co.

Patriotism and Printing Education, by Dr. Charles H. Lake, Superintendent of Cleveland Public Schools.

Art and Its Relationship to Printing Education by Alfred Howell, Directing Supervisor of Arts, Cleveland Public Schools and Professor Otto F. Ege, Cleveland School of Art.

The Graphic Arts Laboratory vs. Traditional Printing, by M. J. Eck, Cleveland Public Schools.

The Arts and Crafts in Modern Living by John A. Backus, director of the Department of Education, American Type Founders, Elizabeth, N. J., and Harold H. Kirk, Printing Instructor, Washington, D. C.

Developing Model Courses of Instruction on a National Basis, by Professor Glen U. Cleeton, Carnegie Institute of Technology, Pittsburgh.

The Place of the Visual Arts in the Instructional Process, by Frank C. Moore, Director of Industrial Arts, Cleveland, Ohio.

Radio, the Fourth R, by Dr. Wm. B. Levenson, Cleveland.

For the first time at the annual Printing Conference, there will be (1) a commercial exhibit of printing equipment and teaching devices; (2) student participation in the program; and (3) the entire printing teaching staff of the Cleveland Public School system taking active part in the program to demonstrate modern teaching technique.

Klean-O-Mat Dissolved

Klean-O-Mat Corporation with offices at 299 Madison Ave., New York, N. Y., has been dissolved, according to an announcement sent recently to the trade. According to the announcement, the Klean-O-Mat process is completely overcome by a new non-acid process recently developed.

Represents Logan for Iowa

The Logan Engineering Company, Chicago, makers of Aridifier air and gas cleaners, advises that J. A. McCoy, 1436 41st Place, Des Moines, Iowa, is now representing the company in Iowa.

Mr. McCoy is well known in the graphic arts field.

MAGAZINE AND PERIODICAL
NEWSPAPER
GENERAL COMMERCIAL
BOOK PUBLISHING-PRINTING
LITHOGRAPHIC
GRAVURE INDUSTRIES

Rank in the order named for value of products according to U. S. Bureau of the Census

MORE than one-fourth of the printing and publishing in the United States is concentrated in the State of New York, according to the Bureau of the Census. Of the 24,878 establishments of the country doing $5,000 or more volume per year enumerated at the 1940 Census in the printing, publishing and allied industries, 4548 were located in New York. These New York establishments accounted for 26% of the total value of all products of this group of industries in the whole country in 1939, the business year covered by the last Census. For the Nation, this total was $2,578,464,382. New York's total was $686,223,319.

Total employment throughout the nation in printing, publishing, and allied industries was 467,527 wage earners and salaried workers. For New York this total was 97,905.

Publishing and printing of magazines and other periodicals accounted for the highest value of products with $197,309,424, reported by 617 establishments employing 12,842.

Newspapers came second with products valued at $159,456,907 reported by 518 establishments employing 24,380 workers.

Third in the list was general commercial (job) printing with products valued at $102,015,813 reported by 1823 establishments employing 21,481 workers.

Book printing and publishing ranked fourth with a total value of products of $93,882,344 reported by 472 establishments employing 9087 workers.

Fifth in the list was the lithographing industry with products valued at $43,429,451 turned out by 199 establishments employing 8196 workers.

Value of output, number of establishments and workers employed for other industries in the printing, publishing, and allied products group were:

Bookbinding, Blank Book Making, and Related Establishments — Products, $33,694,080; establishments, 406; workers, 10,181.

Photoengraving — Products, $16,296,293; establishments, 116; workers, 3142.

Greeting Card Publishers — Products, $12,028,468; establishments, 38; workers 2200.

Electrotyping and Stereotyping not done in printing plants — Products, $9,228,016; establishments, 52; workers, 1530.

Typesetting — Products, $7,931,757; establishments, 184; workers, 2314.

Engraving and Plate Printing—Products, $6,700,630; establishments, 116; workers, 1896.

Gravure (Rotogravure, and Photogravure) — Products, $4,250,136; establishments, 7; workers, 656.

WHY EMPLOYMENT RELATIONS?

THIS is the title of a booklet reprint of a talk given by Thomas Roy Jones, President, American Type Founders, before the N.A.M. Institute on Employment Relations at Edgewater, Miss., in March.

Production and mechanical executives should be highly interested in Mr. Jones's address because of his comprehension of a changed condition in the industry with respect to the human relations angle. His attitude as expressed in the address referred to above is modern in every respect.

"From the standpoint of the personnel man," said the speaker, "there are three classes of people to be educated and I name them in the direct order of their necessity for education. First, the officers and executives; second, the supervisors, and third, the workers. I am not joking when I name the officers and executives first. Volumes have been written about the education of the supervisor of men or foreman. Let's not get confused about the definition of a foreman. A foreman from the standpoint of personnel policy is any man, whatever his title, who directs or supervises the activity in any degree of any other man or men."

Production and mechanical executives may obtain a copy of the booklet by addressing William B. Marsh, ATF Public Relations Representative, 225 Varick St., New York, N. Y.

Announces Palisade

Palisade, an extra condensed version of Bodoni Bold, is announced by Intertype Corporation. Examples of the 18 and 24 point sizes are shown. These two sizes are available in combination with Alternate Gothic No. 1. Palisade is being cut in sizes 18 to 48 point.

Fourteen point Futura Bold Condensed is a special variation of the Futura family. As will be noted the medium face of this combination is taller than the bold to provide two distinct sizes.

Intertype Franklin Gothic with Italic will soon be available in a complete range of sizes.

BETTER PRINTING IS PRODUCED
Intertype faces are made 1234

BETTER PRINTING IS PRODUCED
Intertype faces are made 1234

14 Pt. Futura Bold Cond. with Medium Cond. No. 2

BETTER PRINTING ME
Intertype faces ar 1234

BETTER PRINTING ME
Intertype faces ar 1234

12 Point Franklin Gothic with Italic

BETTER PRINTING IS PRODU
Intertype faces are m 1234

18 Point Palisade

BETTER PRINTING IS
Intertype faces a 123

24 Point Palisade

Chemical Coatings Brochure

Of interest to printers, lithographers, advertisers, and others, is Interchemical Corporation's new brochure called, *More Than Meets The Eye*, which describes recent advances in the field of decorative and protective coatings. The chemical coatings discussed include printing and lithographic inks, gravure inks, industrial finishes, metal decorating materials, textile colors, pigments and raw materials, coated fabrics, and various office and artist's supplies.

It is pointed out that in many cases, these coatings are related in character. Thus fundamental research directed to problems involving one type of coating, such as printing inks, may very well have application to the problems involving other types of coatings, such as textile colors and industrial finishes. How this research has produced improved materials which make possible faster production and improve the appearance and durability of many kinds of products is covered in a picture story.

Copies may be obtained by writing to Interchemical Corporation, 75 Varick Street, New York City.

Illustration by JOHN HOLMGREN Courtesy of COLLIERS

LEVEY Inks

A NEW HIGH IN GRAVURE INKS

Created by **LEVEY**

PLEASE TURN THE PAGE

HIGH SPEED

WIDER APPLICATION

BETTER IMPRESSIONS

GREAT SAVINGS IN COST

These are the contributions of

LEVEY'S *New Type "A"* GRAVURE *Ink*

THIS NEW TYPE "A" is the answer to the ink demands of the highest speed gravure presses. The originators of FLASHDRI bring topmost speed to gravure printing. New type "A" gravure inks perform equally well on slow presses with the exposed type fountains.

Levey's new type "A" gravure ink allows reduction with straight petroleum hydrocarbons. Solvent costs are cut to nearly one-third and the Gravure Industry is saved many hundred thousand dollars annually.

New type "A" gravure ink spells press room safety. Ordinary ventilation minimizes any danger to health. Health authorities have approved our formulation and sanctioned its use.

Containing no cellulose, this ink dries with the rapidity of hitherto fast-type inks. It has been tested commercially at a speed in excess of 1,000 feet per minute with eminently satisfactory results.

Levey's new type "A" gravure ink was especially devised for use on magazine and news stocks such as rotoplate, machine finished, super calendered and coated stocks. It prints with better finish and gloss than heretofore has been possible with gravure inks.

High color strength resulting from special pigment treatment along with exceptional suspension give this ink great value in the new types of gravure printing such as reversed half-tone, and permits a closer matching of colors.

Levey's new type "A" gravure ink is now being produced in volume to supply the industry. For its special manufacture a model plant has been erected at Monmouth Junction, New Jersey.

LEVEY *Inks*

UNIT OF COLUMBIAN CARBON COMPANY

We invite your inquiry. Also we offer expert engineering service to enable you to obtain the best possible results.

FRED'K H. LEVEY CO., INC.

FLASHDRI • LETTERPRESS • LITHOGRAPHIC INKS

Makers of Fine Printing Inks Since 1874

PHILADELPHIA **NEW YORK** CHICAGO

BROOKLYN • BALTIMORE • CINCINNATI

MONMOUTH JUNCTION, N. J. • SPRINGFIELD, O.

NEW TERRITORY *covered by Southern California Conference represented by states of Arizona and New Mexico — Name changed to Southwest Mechanical Conference*

By FRED J. MOYER*

*Secretary-Treasurer, Southwest Mechanical Conference.

ABOUT two hundred mechanical executives of Southern California and Arizona attended the sixth Southern California Mechanical Conference at the Elks Temple in Los Angeles, Saturday and Sunday, April 26 and 27. Supply company and manufacturers' representatives swelled the attendance to about 250 registered delegates.

The most important action of the business session was changing the name of the conference. This was brought about by broadening the territory to be covered by the conference. The new name is the Southwest Mechanical Conference and the states of Arizona and New Mexico are now included in addition to Southern California.

After being welcomed by J. D. Funk, secretary-treasurer of the California Newspaper Publishers Association and General Manager of the Santa Monica *Evening Outlook*, the Conference resolved into five separate group meetings. These round-table discussions were presided over by the following chairmen: For the composing room, Jerry Bolman of the Los Angeles *Shopping News;* the Stereotypers, Ralph Prickett of the *Commercial News-Press;* the Pressmen, Charles Rogers of the Rogers-McDonald company of Los Angeles; the Engravers, Leslie Bennett of the Mission Engraving Company of Los Angeles; the Machinists, Herb Young of the Pasadena *Star-News*.

Orcutt Speaks

The Saturday evening session convened immediately after a fine banquet at which 200 delegates were seated. President Ruhmland of the Glendale *News-Press*, introduced the speaker of the evening, Vice President Reginald T. Orcutt, of the Mergenthaler Linotype company, who is in charge of overseas sales in Europe. Mr. Orcutt spoke on *Printing Conditions in Europe*. He has traveled extensively during the twenty years he has represented his company overseas and related many experiences, some of which were humorous, others were tragic and still others instructive and all were very interesting to those present. Among the many statements he made were: "Neutral countries came out of the last world war with a free press. . . . Germany never has had a free press. . . . Russia was the country most feared after the world war. . . . Censorship has been the blight of the newspapers in Europe. . . . In many instances European newspapers could show the American newspapers many things, mechanically speaking — in color work, in equipment and in methods."

Thoughts About Alterations

There were in attendance at the banquet a number of advertising managers of publications in this district and of the main retail stores. These guests joined in a general discussion on advertising problems, during which many good ideas were advanced. A few of these were: "It is the duty of the composing room to produce what the advertisers want. . . . It is agreed too much time is lost in alterations. . . . We are obligated to the publishers to eliminate this condition. . . . We need more co-operation between the advertiser and the composing room. . . . Clean proofs are often the key to the elimination of much lost time from alterations. . . . Writing ads is like drawing a plan for a house—printers should be able to follow the layout and if any changes are made they should be expensive to the advertiser. . . . Should follow through and let the management know what the troubles are. . . . The best results of the last conference were the importance of good proofs—it really eliminated much of the rehashing. . . . Find out just what the advertiser wants—if in doubt call him up. . . . Take original copy to the real advertising heads of the retail stores and get their OK before it is submitted to be set."

As a result of the Sunday morning session the delegates now know what it means to manufacture good newsprint. The Crown Willamette Paper Co. furnished four reels of color pictures showing the manufacture of paper from the tree to the finished product. The pictures were in charge of Ray Schadt, mill representative; Fred Bostock, factory representative, and F. R. Ward of the Powell River Sales company.

High lights of the conference were the reports of the chairmen of the round-table discussions. These reports were read to the assembled conference and discussions were taken up by the different departments. There was much interest shown in these reports as the discussions were carried well over into the afternoon meeting.

At the business session, Los Angeles was again chosen for the next meeting. The old officers were re-elected for another term as follows: Chas. H. Ruhmland, Superintendent Glendale *News-Press*, president; Earl C. Leavitt, Superintendent Culver City *Star-News*, vice president; Fred J. Moyer, machinist of the Los Angeles *Daily News*, secretary-treasurer.

California Monotype Moves

The Monotype Company of California, is now located in the Sharon Building, 55 New Montgomery Street, San Francisco, Calif. The company's former address was 156 Second Street.

1—*Conference officers (left to right): Vice President Earl C. Leavitt of the Culver City (Calif.)* Star-News; *President Charles H. Ruhmland of the Glendale (Calif.)* News-Press; *Secretary-Treasurer Fred J. Moyer of the Los Angeles* Daily News.

2—*General Manager J. P. Funk of the Santa Monica (Calif.)* Outlook, *and secretary of the C.N.P.A.; General Manager Pete Ritcha of the Alhambra (Calif.)* Post-Advocate; *Foreman Stanley Wills of the Alhambra* Post-Advocate; *Superintendent Al Fishburn of the Los Angeles* Shopping News.

3—*Superintendent Chas. P. Medland of the Pasadena (Calif.)* Star-News; *Manager Elmer H. Hostetler of Intertype's Los Angeles Branch office; Composing Room Foreman Hamilton V. Neill of the Los Angeles* Examiner; *Composing Room Foreman Ernest Gee of the Los Angeles* Herald-Express.

SPRING MEETING *of New England*

Composing Room Executives draws good attendance

THE semi-annual (spring) meeting of the New England Daily Newspaper Composing Room Executives Association was held in Beverly, Mass., on Saturday and Sunday, May 3 and 4. Approximately 65 printing plant executives, manufacturer and supplier representatives and guests were in attendance.

The conference really started with committee meetings on Saturday night at Hotel Hawthorne in Salem, including informal get-together groups.

On Sunday morning, the registered executives were conducted through the plant of the Beverly *Times*. Assisting Composing Room Superintendent Edwin A. Hutt, were Machinist John Stewart: Ad Man Harry O'Brien; Press and Stereo Foreman Lewis Reed, Photo-engraver Ernest S. Tucker, and Advertising Salesman Harlan S. Noyes.

After the plant inspection, the group gathered at Lodge Pole Ranch for a meeting with various manufacturer and supplier representatives, who discussed their companies' newest products. The following representatives spoke: William G. Murray, Mergenthaler Linotype company; Frederick Dunham, Ludlow Typograph company; Aaron Cohen, Acme Type Metal company; Charles H. Stout, vice president of the Matrix Contrast company; Charles Olton, Imperial Type Metal company; J. L. Hagan, Lanston Monotype Machine company, and Ray Daigle, Intertype Corporation.

A banquet-dinner was held at noon. President Francis Britton, Production Manager of the Nashua (N.H.) *Telegraph*, presided during the speaking program. Mr. Britton introduced John W. Bittner, Assistant to the Chief Engineer of Intertype Corporation, who reviewed line-composing machine developments during the past ten years. Mr. Bittner initiated his address by stating: "Because labor constitutes close to 60% of the cost of publication, it is noteworthy that the composing machine improvements to be discussed are directed principally toward economy in the composing room." Mr. Bittner then discussed the automatic quadder, molds, six-mold disk, four-magazine machines, dual alignment matrices, two-letter display matrices, improved heat control for metal pots, the baffle mouthpiece, distributor signal lamp, and the Universal Intertype.

The only other speaker on the after-dinner program was Publisher Lewis R. Hovey of the Beverly *Evening Times*.

The following slate of new officers was elected: President, Edwin A. Hutt, Composing Room Foreman of the Beverly *Evening Times;* Vice President, Raymond J. Cox of the Bangor (Me.) *Daily News;* Secretary, William Madden of the Worcester (Mass.) *Gazette;* Treasurer, Lewis R. Greene, of the Westerly (R.I.) *Sun*. Daniel Stevens of the Middletown (Conn.) *Press*, was named to the board of directors for three years, and Ralph Johnson of the Brockton (Mass.) *Enterprise*, to fill an unexpired term as director.

The next meeting will be held jointly with the meeting of the New England Mechanical Conference, Hotel Statler, Boston, on October 4, 5 and 6.

Pictured following the election of officers at the semi-annual conference of the New England Composing Room Executives' association held in Beverly, Mass., on May 4, are (left to right) Lewis R. Greene, treasurer; William Madden, secretary; Raymond J. Cox, vice president; Edwin A. Hutt, president; Ralph Johnson and Daniel Stevens, directors. (Beverly Times *Staff Photos*)

At the head table at the semi-annual banquet of the New England Daily Newspaper Composing Room Executives' Association, are seated (left to right) Francis M. Britton, past president; John W. Bittner, of New York; Lewis R. Hovey, Publisher of the Beverly Evening Times *and Haverhill* Sunday Record; *Laurence S. Hovey, business manager of the Beverly* Evening Times; *Carleton B. Hovey, managing editor of the Beverly* Evening Times. *Standing (left to right) are Daniel Stevens of Middletown, Conn.; Edwin A. Hutt, new president of the association; Joseph J. Mahoney of Holyoke and J. Frank Coughlin also of Holyoke.*

BOOKS

RECEIVED

Behind the Type

BEHIND THE TYPE: The Life Story of Frederic W. Goudy, by Bernard Lewis (a graduate of Department of Printing, Carnegie Institute of Technology), is an appreciative biographical narrative. The MS had the approval of Mr. Goudy. We are glad this book has been published concerning the life story of the man about whom most every printer has heard but so few have had opportunity to get acquainted with his personal career.

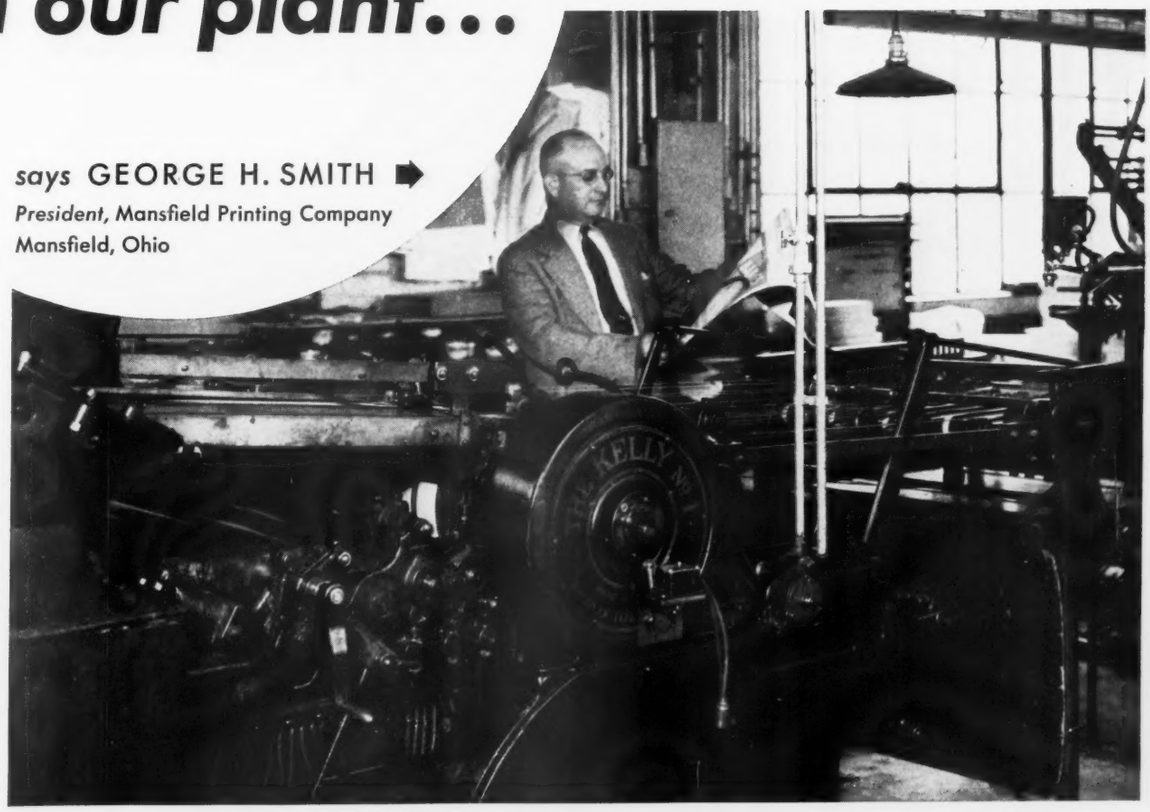
The book was printed as a student project under the direction of Glenn U. Cleeton, Head of the Department of Printing. In the preface, Professor Cleeton relates how the book was created. Both the Preface and the Colophon give details about the production work. The 17 illustrations by Collotype were printed by the Fredrick Photogelatine Press of New York, N. Y. Binding by Russell-Rutter Company, also of New York. Monotype Goudy Village 410 was used for text page composition.

The edition consists of 1600 copies; 600 copies were released to the American Institute of Graphic Arts for distribution as keepsakes. Most of the remaining 1000 copies have been distributed on subscription to alumni and friends of the Department of Printing. About 200 copies are available to the general public.

Behind the Type: The Life Story of Frederic W. Goudy, by Bernard Lewis; 114 pages, 17 collotype illustrations; size, 6½ in. by 9½ in.; bound in blue boards with buckram gold-stamped back. May be ordered directly from

We have only Kellys in our plant...

says GEORGE H. SMITH
President, Mansfield Printing Company
Mansfield, Ohio



"We checked all kinds of other printing equipment before buying . . . and found that Kellys were superior in every way . . . especially in quality of work, as well as production and low upkeep. It has been our experience with ATF that they have always given us the best of service."

The opinion of this progressive Ohio printer is echoed by many letterpress plants throughout the country where Kellys have no equal for profitable performance. Compare before you buy . . . if you are not familiar with Kelly advantages and profit possibilities, your ATF Salesman will be glad to discuss them with you.

Types used: Spartan Family
Bulmer Italic

ATF
AMERICAN TYPE FOUNDERS

ATF makes Type, the Kelly Clipper, ATF17x22, No. 1 and No 2 Kellys, the Little Giant, ATF Non-Offset Gun, ATF-Webendorfer web and sheet fed offset presses

200 ELMORA AVENUE • ELIZABETH, NEW JERSEY
Branches and Dealers in Principal Cities throughout the Country

Department of Printing, Carnegie Institute of Technology, Pittsburgh, Pa., or through *Printing Equipment Engineer*. Price, $2.50 per copy, cash with order.

Jefferson Bibliography

THE title of the booklet *Some Aspects of Jefferson Bibliography*, prepared by William H. Peden, Department of English, University of Maryland, really is self-explanatory. Our purpose in mentioning the booklet here is that it was designed and printed by C. Harold Lauck at the Journalism Laboratory Press, Washington and Lee University, Lexington, Va. Mr. Lauck is well-known among printing's production executives for his beautifully executed books and booklets. The edition consists of 350 numbered copies.

Jefferson scholars will certainly be highly interested in the author's friendly discussion. He tells the reader: "If I have no desire to persuade you that Jefferson was a bibliographer, I have a very real desire to persuade you that Jefferson is an important subject for bibliographical research . . . the field has been largely unexplored."

Copies of the brochure may be obtained at $1.25 per copy from C. Harold Lauck, P. O. Box 925, Lexington, Va.

Photo-Offset Lithography

THE author of Photo-Offset Lithography, who by the way is Donald Nicholson, Manager of Ronalds Offset-Lithographers, Ltd., of Montreal, Canada, states that the book has been written with the hope that it would help those who have had similar problems in instructing apprentices and making lithographic plants run smoothly. In writing the book, the author was concerned with people in the trade who do not have a scientific background and apprentices and craftsmen engaged in the trade. We believe this manual would be of use to any letterpress production or mechanical executive who wishes to become acquainted with the fundamentals of offset-lith.

Chapters in the book are titled as follows: Preparation of Copy, Camera Work, Layout, Plate Making, and Press Work. Thirty illustrations appear in the book, together with tables and formulae incidental to camera work, platemaking and presswork.

Photo-Offset Lithography — By Donald Nicholson. Published by Chemical Publishing Co., Inc., 148 G Lafayette St., New York, N. Y. Size 5½ in. by 8¾ in., bound in gold stamped blue cloth, 154 pages, 30 illustrations. Price $3.50 per copy. May be ordered from the publishers.

Stronger Fire Control

needed in all printing plants — Record Shows that Fires Increase When Production Rises — Good housekeeping rules help prevent fires

By LEONARD F. MAAR*

*Safety Research Institute, New York, N Y.

WHEN the presses begin to thunder on extra shifts and completed orders pile up in the shipping room, that is the time to be especially alert for fire. In industry generally the record of fire experience indicates that the number of fires increase with greater production activity, and printing is no exception.

Fire control, of course, is based on a well-balanced program of fire prevention and fire protection. Perhaps in the past the emphasis has been on prevention, rather than protection. This is sound only up to a certain point and that point is reached when the unavoidable fires occur. Then the printer must depend upon protection, and its quality will decide whether fires are to be put out quickly with minimum losses or to be allowed to spread unchecked until the heavy artillery of the automatic sprinkler system and the fire department go to work.

In the composing room, scrupulous housekeeping and readily available fire extinguishers make a fire-safe combination.

All through the plant, the locations of fire extinguishers and standpipe hose are clearly marked. Clear aisles in the paper storage room, plus fire fighting equipment, make it possible for plant workmen to put out fires as soon as they start.

If a day-to-day program of prevention is followed, the plant will be relatively safe from fire during the hours it is unoccupied. Waste paper will be disposed of, there will be no careless smokers on the premises, electric power will be off, presses will be quiet, and the metal pots will be just simmering if they are hot at all. But during business hours the hazards are more acute and the need for protection is greater.

The first line of defense against fire is the portable fire extinguisher. The fire insurance inspector, no doubt, insists that there be a certain number of them on hand. But he is thinking in terms of minimum protection, and if he is the only one worrying about your fire problem, only one extinguisher will hang on the wall where perhaps there should be two of them. The printer should understand the hazards of his own plant and accept the responsibility for fire safety, just as he must accept his losses from fire.

Three Classes of Fires

Three classes of fire are recognized by the fire control expert. Class A includes fires in ordinary combustible materials such as paper, wood, textiles, etc. These require the cooling effect of combined water and chemicals, or smothering and cooling effects of Foam Solutions, or the smothering effects of vaporizing liquids.

Class B fires are those in flammable liquids such as gasoline, kerosene, oils, some inks, lacquers, etc., which are found in abundance in printing plants. These fires require a blanketing and smothering effect that will exclude oxygen from the flames.

Then there are the Class C fires which occur in live electrical equipment. It would be dangerous to use an extinguishant on them that conducts electric current. (*Continued on Page 70*)

Keeping in Touch

PREPARED BY INTERNATIONAL PRINTING INK DIVISION OF INTERCHEMICAL CORPORATION • JUNE, 1941

NEW INKS SET INSTANTLY WITH PLAIN TAP WATER!

Faster Printing—Cleaner Impressions—No Offsetting or Smudging

A development which may revolutionize many phases of printing is now being marketed by IPI. This development is Vaposet—a type of ink which sets with plain tap water, permitting much faster printing with a sharper, cleaner impression.

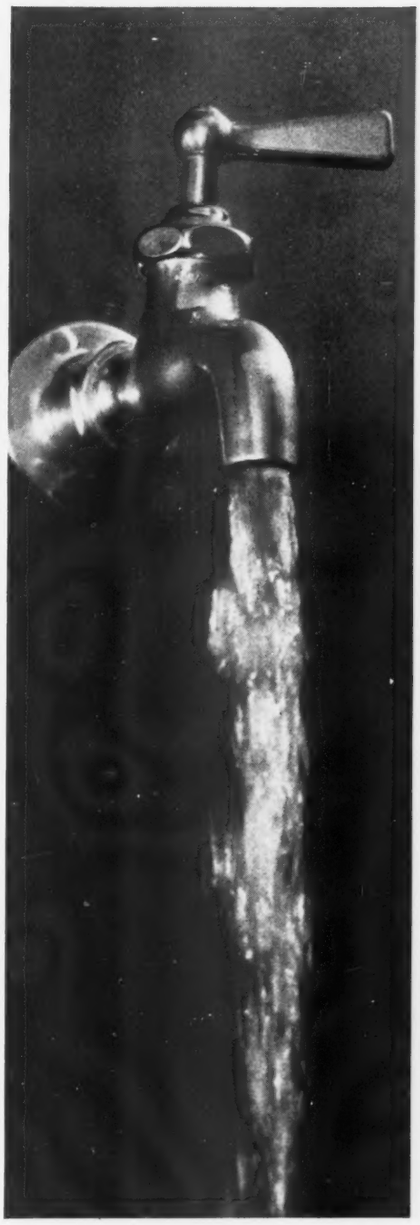
Vaposet inks require only simple equipment. Pre-melting systems are eliminated, yet drying is practically instantaneous. In many cases, an ordinary water spray is sufficient. Rubber rollers are usually necessary. The water is applied in vapor form, either in a spray or as steam, striking the wet ink as it is transferred to the paper. Through a process of precipitation, the water sets the ink, leaving it dry and clean with an unusually brilliant tone. There is no offsetting or smudging. Excess penetration is reduced materially.

Development of Vaposet

Vaposet inks are a development of IPI Research for the wrapper and container field. From IPI laboratories have come Vaporin, Lithox, Holdfast, and Anilox, and other important contributions to faster, finer printing. Work on moisture-set inks at the laboratories has been carried on for many years, but only recently has this remarkable development been considered sufficiently advanced to be released for commercial use.

In several plants, Vaposet has already been used to produce butter cartons, breadwrappers, cement bags, and other containers. Experimental runs for other types of printing are being conducted.

Patents relating to Vaposet printing issued to Interchemical include U. S. patents numbers 2,081,949, 2,157,385, 2,157,387, and 2,157,388.



Important! At present, it is advisable to engineer the Vaposet inks specifically for each particular job. Write to IPI for details on how you can get the advantages which these new inks provide for the printer of paper containers and wrappers.

HOW VAPOSET INKS WORK

Basic Principles of Ink Drying Methods

Ink films are dried by a number of different methods. News inks dry by absorption into the paper; typographic foil and cellophane printing inks dry by oxidation; carton inks, process inks, offset inks, and some other types dry by a combination of oxidation and absorption. Gravure and aniline (spirit) inks dry by evaporation of the solvent.

More recently, new inks have been developed which dry by vaporization. Notable among these is IPI's Vaporin, the speed-printing ink which dries through vaporization, under heat. Because of the amazing press speeds it makes possible, Vaporin has been widely used in publication printing.

Now comes Vaposet, which sets by precipitation when sprayed with plain tap water or water vapor such as steam.

Drying by precipitation has been accomplished for several years in the production of waxed products, such as milk bottle caps. Here the freshly-printed inks are immersed in melted paraffin, which reacts to set the inks instantly. Wax-set inks are an IPI development, and experience in this field led to an understanding of the basic principles which made possible Vaposet.

INTERNATIONAL PRINTING INK
Division of Interchemical Corporation
75 VARICK STREET, NEW YORK

**Reg. U. S. Pat. Off.*

Is Red The Best Color?

By HERBERT KAUFMAN*

*General Printing Ink Corporation, New York, N. Y.

ACCORDING to the Color Research Laboratory of the Eagle Printing Ink Company, red outsells any other color in a printing ink by a wide margin. From such a fact a designer of printed matter might conclude that any other color but red might be better in order to get away from the commonplace. Such reasoning, however, has a certain element of hazard to it. In mass merchandise elementary hues sell best.

Although we may be "sick" of a certain color, this is no cause to conclude that everyone else is in the same mood. Red perhaps is the most commonplace color because it is now — as always — the most startling and compelling of hues.

Why get away from it? In a word, if everyone else uses red, and if red is inherently a good color, make your particular use of it even more exciting. Find unusual and unique ways to feature it. Glorify it beyond the ability of your competitors. And people who by instinct like red will run first to your display of it.

Classes of Extinguishers

Manufacturers of fire extinguishers have provided equipment for these three classes of fire. Approved extinguishers are those that meet the standards of Underwriters' Laboratories or the Factory Mutual Laboratories. These units are marked with a label of approval that assures the owners of a certain standard of performance. The various types of extinguishers, approved for use on the three classes of fire, are:

Class A fires — The soda-acid, foam, loaded stream, anti-freeze, and water type extinguishers. The vaporizing liquid unit is approved for use on Class A fires that are not deep-seated.

Class B fires — The foam, vaporizing liquid, loaded stream, dry chemical, and carbon dioxide types.

Class C fires — The vaporizing liquid, dry chemical, and carbon dioxide types.

Fire Instruction Periods

All employes should know how to handle the various types of extinguishers and their purpose. Brief periods of instruction for employes along this line will pay fat dividends when a fire emergency occurs. The extinguishers should be inspected and recharged according to the instructions which appear plainly on the units.

This equipment is not the whole story of fire protection, of course. But if extinguishers are used promptly and effectively, they will put out the great majority of fires with minimum losses. The National Fire Protection Association estimates that from 70% to 90% of all the fires that occur are extinguished by first aid fire appliances.

Automatic sprinklers, fire doors, and other items of equipment all have a place in the scheme of protection and their use in each individual plant should be thoroughly investigated.

There are a few special hazards in print shops. These include the handling of ink and ink storage, lacquer and spirit varnish processes, metallic dusting powders, and hot metal that might be spilled from composing machines or melting pots near combustible material. The printer is generally aware of these hazards and takes steps to safeguard them. It is the common hazards which are most troublesome.

Common Fire Causes

In the order of their frequency, these common causes of fire are:

Careless smoking and use of matches.
Defective electrical equipment.
Defective heating plants and chimneys.
Poor housekeeping.

There should be an area in the plant where workers may smoke safely, and the no-smoking rule elsewhere should be enforced rigidly.

The hazard of defective electrical equipment can be overcome by having all installations of motors, transmission, etc., and extensions of wiring done by a licensed electrician who is able to give you a certificate that you may present to your fire insurance company.

The annual inspection of boilers, oil burners, etc., will greatly improve fire safety and will also provide greater efficiency in the operation of the heating plant. Chimneys, too, will be inspected annually for signs of deterioration, and periodic cleaning is recommended.

Good Housekeeping

Good housekeeping is, of course, a cardinal rule of fire prevention in printing plants. Ink and oil-soaked rags should be disposed of at the end of each day by burning, or kept in covered metal containers. Oil spills should be cleaned up without delay. Accumulations of paper around presses should be removed frequently and the paper baled for storage in a fire-resisting vault or room. In the paper stock room, or wherever the paper is cut, particular attention should be given to cleaning out the waste paper bin each day.

Since there is danger of spontaneous ignition of oil-soaked paper, it is a good plan to separate it from the rest of the waste paper and burn it. If it goes into the baler, it may start a fire.

A great deal of material is published on fire safety with the intent of frightening people into taking some action. That is not the intent here. If a printer takes reasonable steps to prevent fire and equips his shop with adequate protective equipment, he need not fear fire at any time. Only when these steps are not taken should the printer get the jitters at every blast of the fire alarm.

Schoolboy Impression Probably Responsible for Invention of Printing

"An impression made on Johann Gutenberg as a schoolboy probably caused him in later life to undertake experiments which resulted in the invention of printing, the fruits of which we see today on the shelves and in the periodical rooms of our modern libraries."

This statement was made by Douglas C. McMurtrie, director of typography of the Ludlow Typograph Company, noted printing historian and chairman of the Invention of Printing Anniversary Committee of the International Association of Printing House Craftsmen, as he addressed Friends of the Library of the University of Chicago some time ago in Breasted Hall on the University campus.

"As a schoolboy in the early fifteenth century, Gutenberg was probably struck by the high cost, prohibitive to many, of a little hand-written Latin grammar known, from the name of its author, as the *Donatus*," McMurtrie said, "and it is significant that of his nineteen earliest pieces of printing, now extant in copies or fragments, seventeen were successive editions of the little Latin grammar."

These seventeen editions of the *Donatus* were all printed before the completion of the celebrated "Gutenberg Bible."

Before Gutenberg invented printing, McMurtrie said, the cost of a single copy of a book of considerable size might well include a year's salary of the skilled workman who wrote or lettered it by hand, the cost of parchment and other materials, plus overhead and profit. It was thus not surprising that few people could afford to own books before the invention of printing.

Booth Products Are Real Production Helps

For the Production and Mechanical Executive, The E. A. Booth Rubber Company furnishes valuable aids to production. Principally, these are Booth's Zink Cut Cement and Booth's Black Rubber Rolls for Line-casting Machine Keyboards. To those executives attending the Buffalo A.N.P.A. Mechanical Conference, we extend an invitation to see our display in booth No. 5.

BOOTH'S ZINK CUT CEMENT is the most economical cut-mounting means in existence. Keeps indefinitely in the air-tight tube, cannot dry out and does not cause a deformation of the cut on its base.

We are pleased to say that Cement orders for April 1941 were double the amount of the best previous month since the Cement was introduced 8 years ago.

ZINK CUT CEMENT PRICES in the United States: 75c per large tube; $6.00 per dozen tubes; $5.00 per dozen tubes in gross lots.

BOOTH'S BLACK RUBBER ROLLS for line-composing machine keyboards were announced to the trade in April. These crepe finish rolls persuade keyboard cams to turn over promptly so that every matrix leaves the magazine in its proper sequence. These rolls are non-blooming, are of uniform diameter and grip the shaft like a glove. Tough as a pig's snout.

Because of large volume production with improved quality we are enabled to offer these rolls at $1.10 per pair; $6 per dozen.

Order a trial pair, try them for 30 days, and if they do not please you the trial pair will cost you nothing.

THE E. A. BOOTH RUBBER COMPANY

364 ROCKEFELLER BUILDING
CLEVELAND, OHIO

PUNCH AND SCRIBED LINES

insure all mats for stereotype color, comic and magazine pages being placed in casting box in registered position

IN order to simplify the process of registering color comic and magazine section stereotype plates on the color press, the Cleveland *Plain Dealer* has made a tool to be used with special side and footsticks. This equipment is used only on pages that are made up in the plant which includes all the magazine pages and a number of comic pages where two half pages have been consolidated on a single page within the plant. Full page mats received from syndicates are registered on the Hoe mat registering rack used in connection with the Hoe vacuum casting box.

In making original black, yellow, red and blue plates, the photo-engraving department observes the usual practice of placing register marks in the zinc plates. Each of the plates is drilled and is registered to position on a section of stereotype base in the form in the customary manner by steel brads (with heads cut off) driven through the holes drilled in one plate so that all plates in the set may be interchanged on the same base when molding the dry mats for each color. When no register marks exist in a mat which must be re-registered, the celluloid sheet transfer method is employed, followed by using the steel brad base positioning method.

The *Plain Dealer's* comic supplement and magazine pages are made up in 7 col. width and also are somewhat shorter than the regular 8 col. page used for regular daily editions. In Fig. 1 is shown such a page form. The color plates rest upon stereotype base into which can be driven the register position brads. Steel bars placed around the plate area take up the difference in page size. These bars, with scribed lines used by the stereotyper when trimming the mats to size, are left permanently in the chase.

The means for insuring that all of the mats in a set of color plates will be placed exactly alike in the curved plate casting box consists of the lines indicated by the two arrows in Fig. 1 which have been scribed in the steel head and foot bars, and the punching plier shown in Fig. 2.

The position-notch punching plier is a belt punching plier suitably remodeled. Maintenance Machinist John Olsen provided the milled steel bars surrounding the page area shown in Fig. 1 and the punching plier itself, Fig. 2. The four revolving tubular punches were removed from the plier head. An oblong steel punch *1* was made and fitted into the head. The brass anvil which comes with the punch was removed and a complementary oblong hole was cut in the lower plier jaw as at *4*. The adjustable plate *2* regulates the depth of the punch in notch *3* in the mat. The scribe line *5*, Figs. 1 and 2, is used by the stereotyper so that in punching the notch in the mat he can place the punch *1* similarly at one side of the line for all the mats in the set.

This equipment makes for more accuracy in paralleling the plates and reduces the twisting of the different color plates on the press to secure register to a minimum.

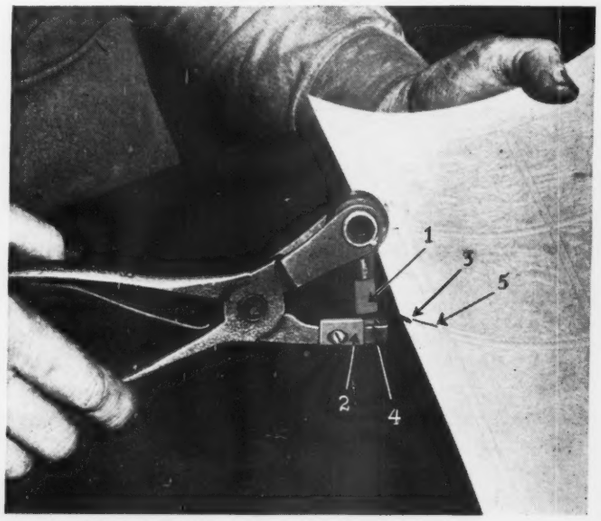


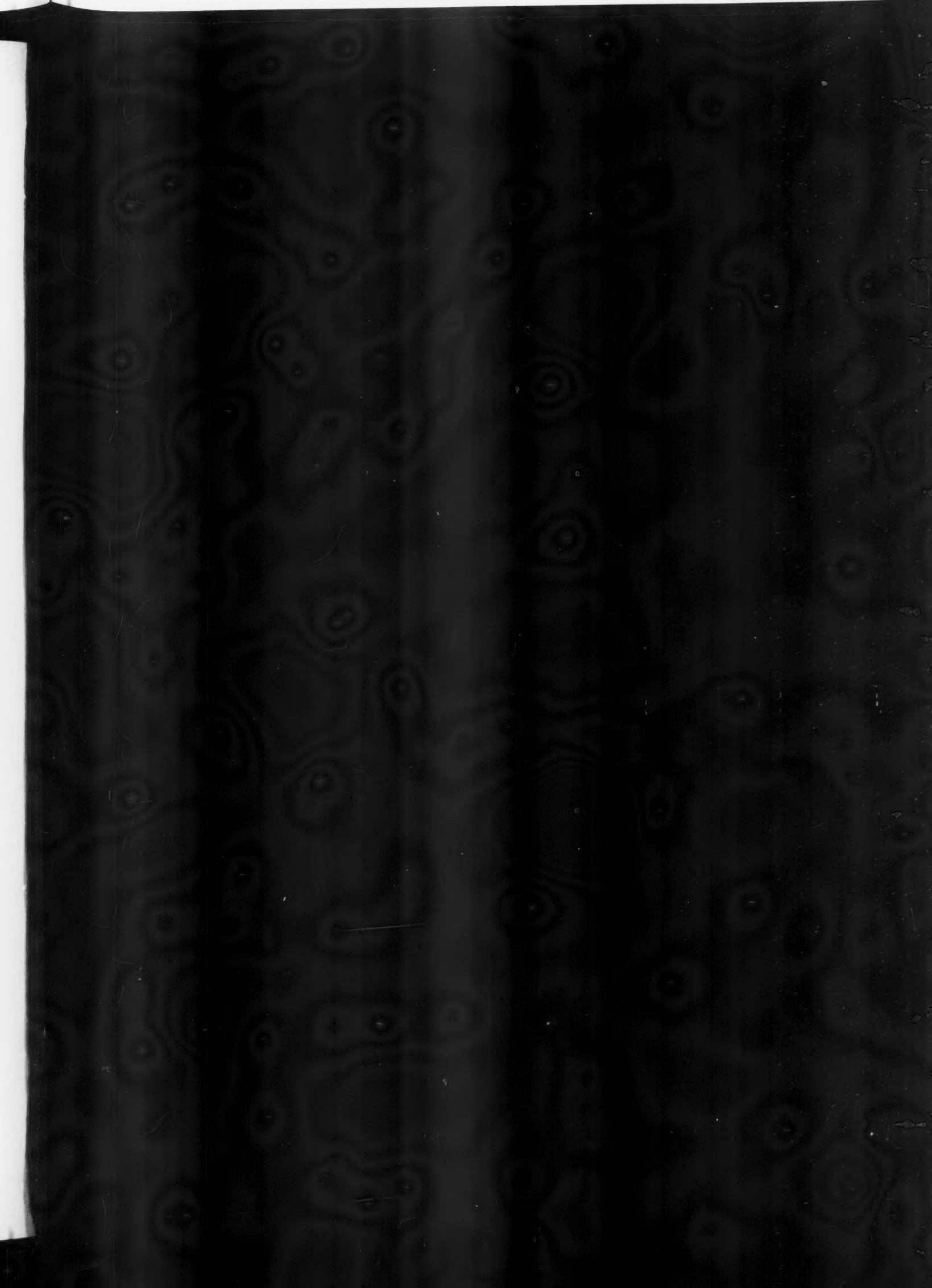
Fig. 2 — The mat punch is a remodeled belt punch. With the punch 1, *the notch* 3 *is placed in the mat alongside the scribed line* 5, *also shown in Fig. 1. Adjustable plate* 2 *limits depth of slot* 3 *in the mat.*

Fig. 1—View of 7 col. color form made up in 8 col. chase at Cleveland Plain Dealer. *The plates are surrounded by steel bars suitably scribed for page limits. The lines* 5 *indicate to the stereotyper where the mat produced from local originals is to be punched with the plier shown in Fig. 2 so that all of the color plates in the set will be positioned exactly alike in the curved plate vacuum casting box.*

Linotype Maintenance Instruction

A school of instruction on care and maintenance of the Linotype has been organized for the benefit of machinists' apprentices of Chicago Typographical Union, No. 16. The apprentices meet Thursday nights at the Linotype Company's Chicago Agency, where a classroom and Blue Streak machine have been set aside for their use.

The school, with Harry G. Pottle as instructor, is sponsored by the Typesetting Machinists' Society of Chicago. At the opening session, members of the class were addressed by Tom Canty, president, and John Piltch, organizer, of No. 16. The weekly meetings will be discontinued during the summer months, but will start again on September 1, Mr. Pottle announces.



MORRILL'S NAC CERISE No. 6067

MORRILL'S NA

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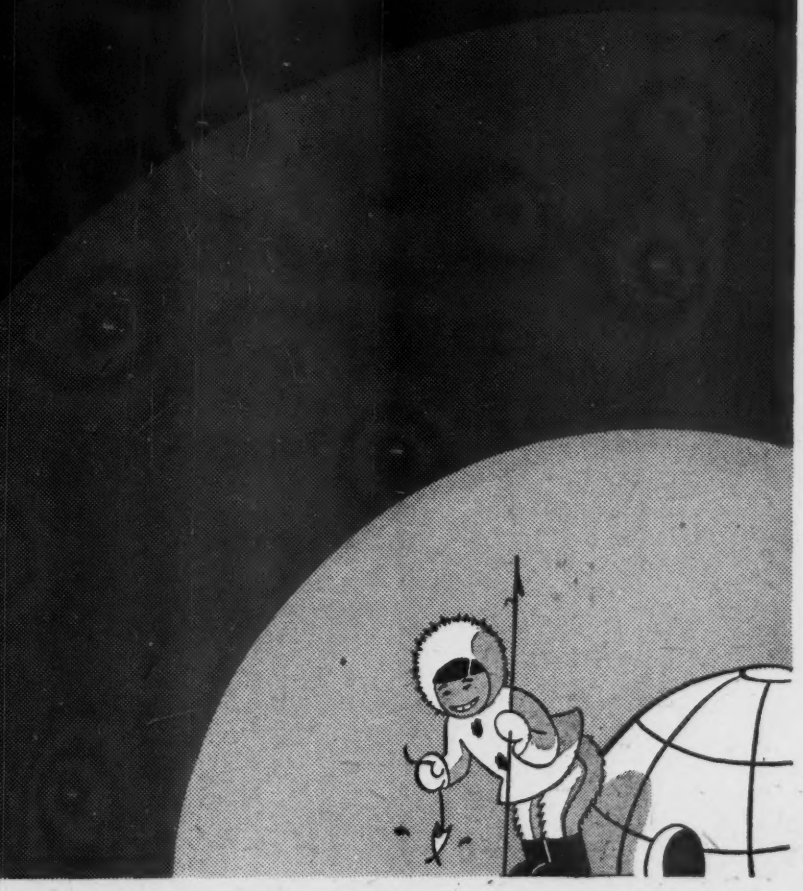
NEW AND
NEWS
ADVER
COL



MORRILL'S NAC MAROON No. 6084

The colors shown on this sheet we
survey had been made to determi
paper advertisements printed in c
improved Morrill Newspaper Ad
any demand for ultimate attentio

The pigment formula and the
new Morrill Newspaper Inks are
done in co-operation with advert
ments of daily newspapers. These
work demanded of them.

Morrill's New and Improved N
the finest product for color adve
product of a Company which has
more than 100 years.

Other colors than those shown

MORRILL'S NAC RED No. 6098

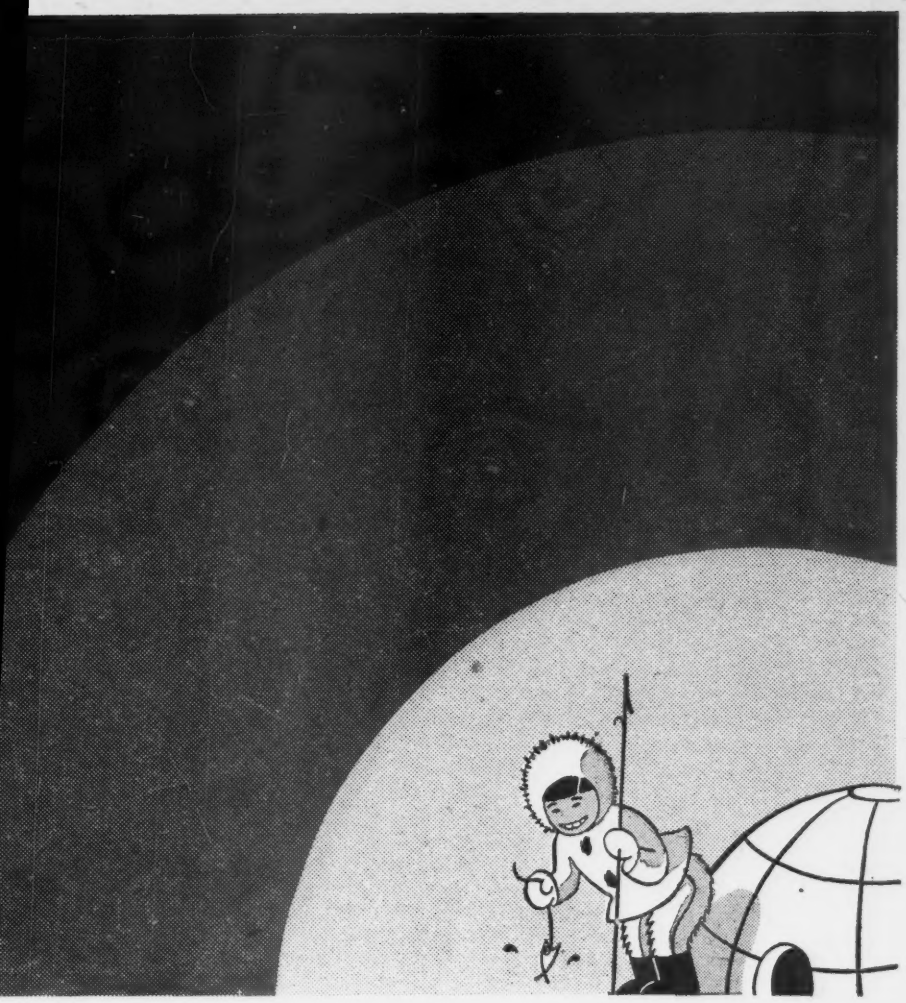
MORRILL'S NEW AND IMPROVED NEWSPAPER ADVERTISING COLORS

The colors shown on this sheet were established after a nation-wide survey had been made to determine the colors most used on newspaper advertisements printed in one-color-and-black. The new and improved Morrill Newspaper Advertising Colors will take care of any demand for ultimate attention value on newspaper advertising.

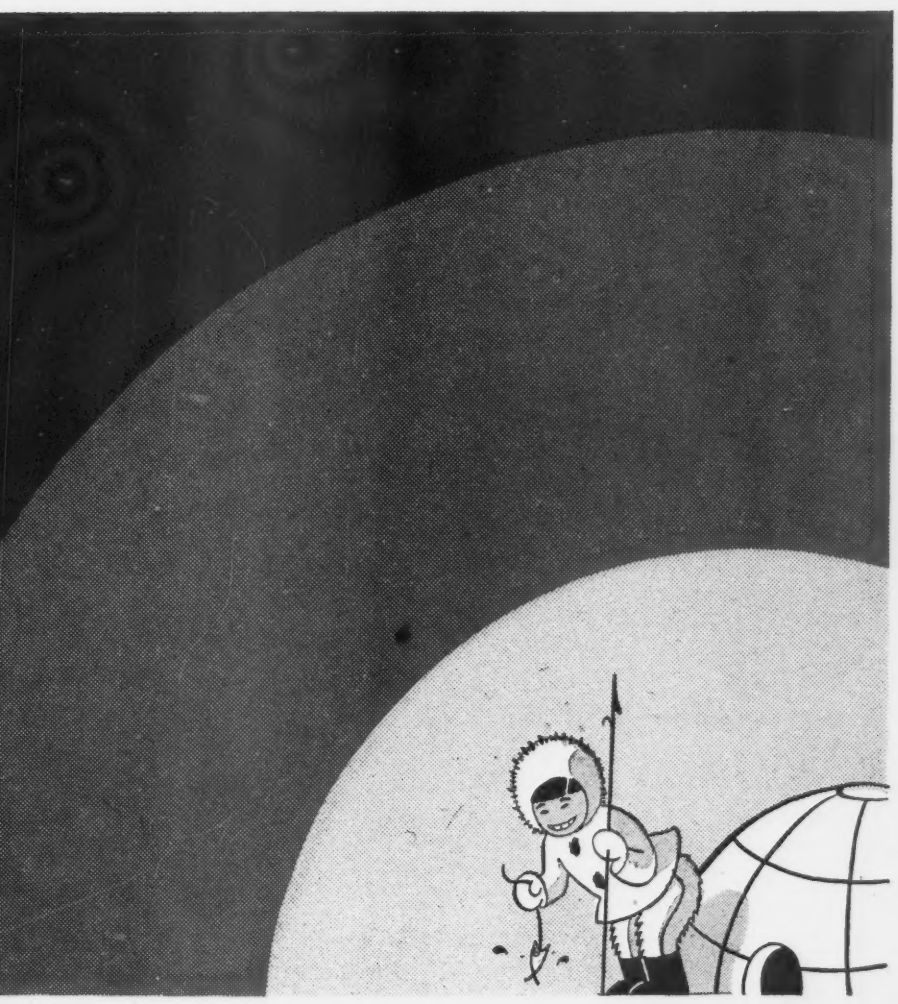
The pigment formula and the manufacturing formula for these new Morrill Newspaper Inks are the result of intensive research done in co-operation with advertisers and the mechanical departments of daily newspapers. These inks are made to do the exacting work demanded of them.

Morrill's New and Improved Newspaper Advertising Colors are the finest product for color advertising in newspapers — the finest product of a Company which has specialized in newspaper inks for more than 100 years.

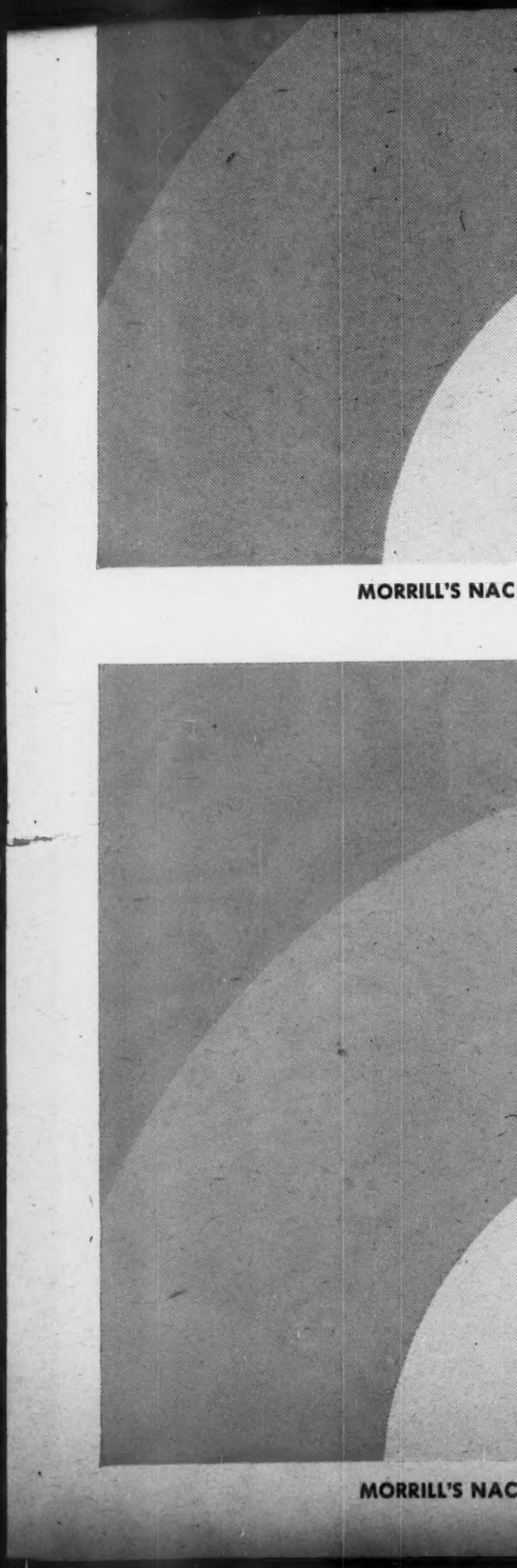
Other colors than those shown here can be made from the new [illegible] on this sheet were

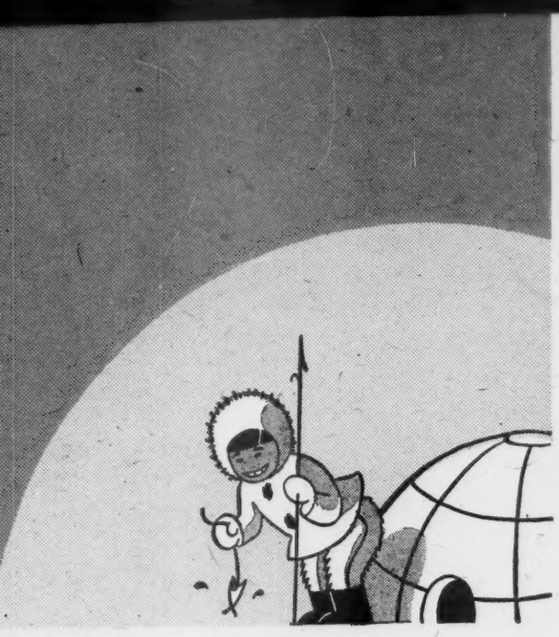


MORRILL'S NAC RED No. 6061



MORRILL'S NAC TAN No. 6066


MORRILL'S NAC
MORRILL'S NAC



ORRILL'S NAC BLUE No. 6060

the finest product for color advertis
product of a Company which has sp
more than 100 years.

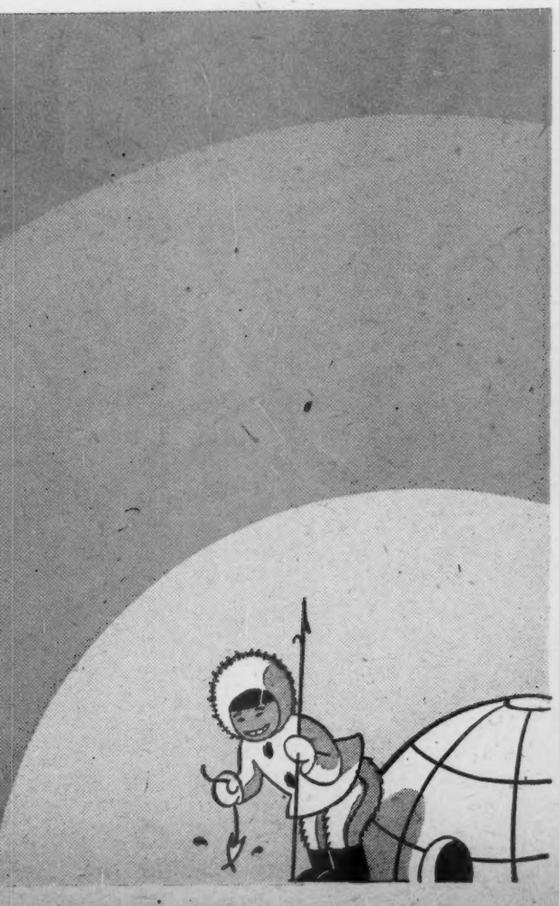
Other colors than those shown h
and finer formula from which the c
made.

GEO. H. MOR

GENERAL PRINTI

NEW YORK, N. Y.

BOSTON, MASS. . . 130 Clarendon Street
PHILADELPHIA, PA. . 137 No. 12th Street
CHICAGO., ILL. . 1445 West Jackson Blvd.
DETROIT, MICH. . . 170 E. Larned Street
ST. LOUIS, MO. . . . . 1514 Pine Street



ORRILL'S NAC BLUE No. 6062

MORRILL'S NA

the finest product for color advertising in newspapers — the finest product of a Company which has specialized in newspaper inks for more than 100 years.

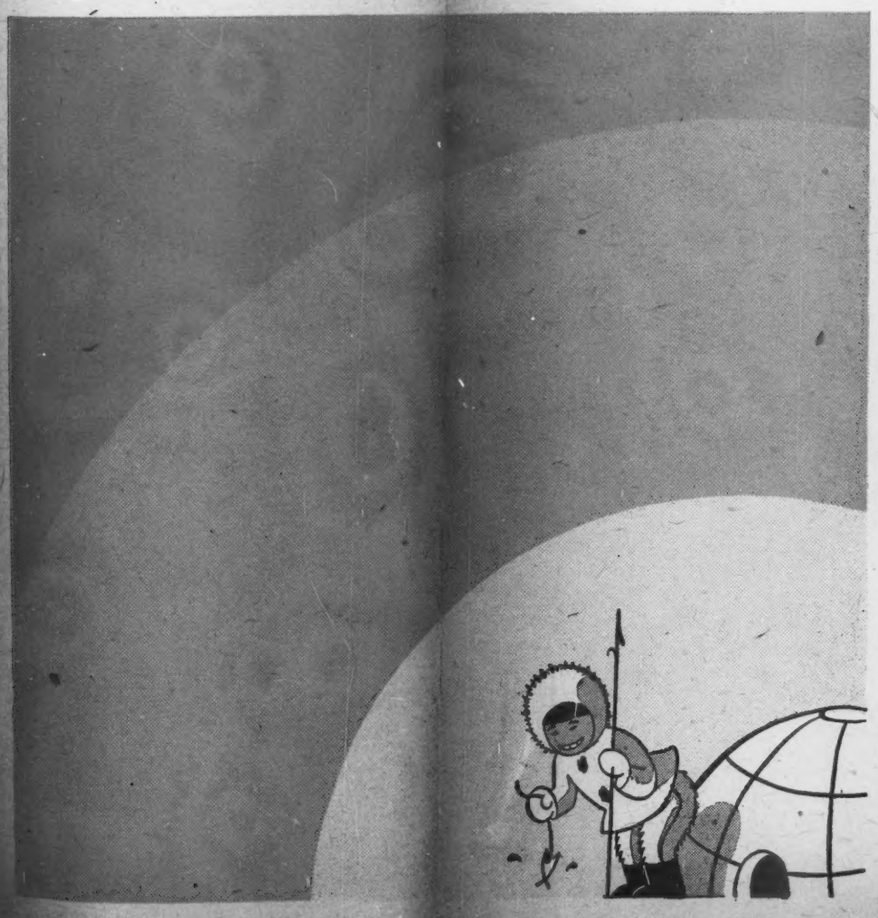
Other colors than those shown here can be made from the new and finer formula from which the colors shown on this sheet were made.

GEO. H. MORRILL CO., DIV.

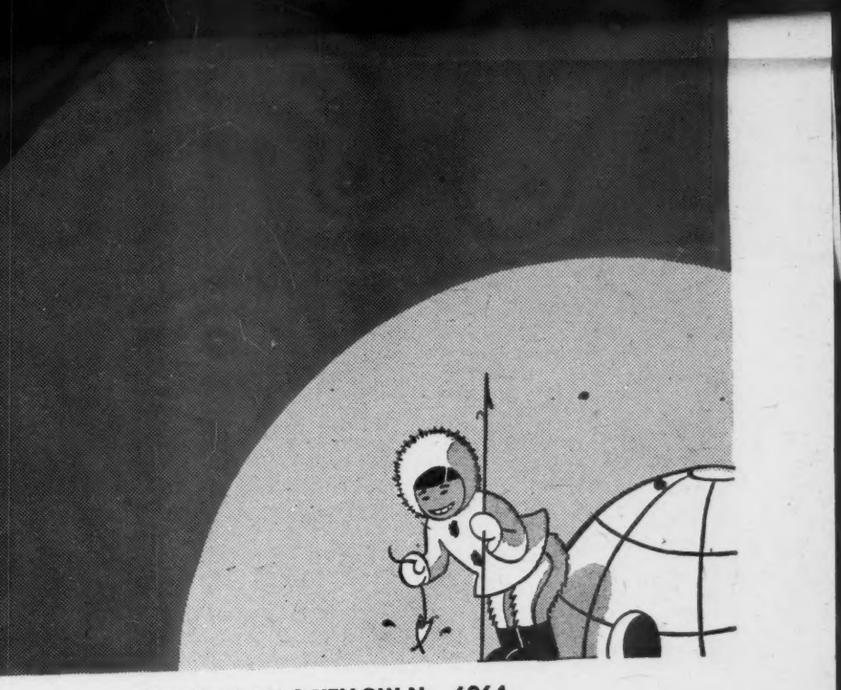
GENERAL PRINTING INK CORP.

NEW YORK, N. Y. • 100 Sixth Avenue

BOSTON, MASS. . . 130 Clarendon Street
PHILADELPHIA, PA. . 137 No. 12th Street
CHICAGO., ILL. . 1445 West Jackson Blvd.
DETROIT, MICH. . . 170 E. Larned Street
ST. LOUIS, MO. . . . . 1514 Pine Street
MINNEAPOLIS, MINN. 529 So. 4th Street
FT. WORTH, TEX. 1300 Throckmorton St.
LOS ANGELES, CALIF . 345 Wall Street
SAN FRANCISCO, CALIF. 1425 Folsom St.
SEATTLE, WASH. . 3131 Western Avenue



MORRILL'S NAC GREEN No. 6063



MORRILL'S NAC YELLOW No. 6064

MORRILL'S NAC GREEN No. 6065

No. 325A *and No.* 325G
VANDERCOOK POWER PROOF PRESSES

1000 BIG PROOFS AN HOUR

No. 325A and No. 325G Vandercook Power Proof Presses print fine proofs of forms up to 24" x 24½" at the rate of 1000 an hour.

The No. 325A and No. 325G Vandercook Power Proof Presses are identical in construction except for slight changes which adapt the No. 325A for printing full size newspaper pages locked in stereotype chases.

The No. 325G Vandercook Power Proof Press is equipped with adjustable end guides which cannot be used on the No. 325A because they would strike the type high stereotype chases when printing.

Automatic Delivery makes possible the production of proofs at high speed. It will deliver sheets from 4" x 6" up to 24½" x 27". Large or small sheets are equally easy to print on the No. 325A and No. 325G Vandercook Proof Presses.

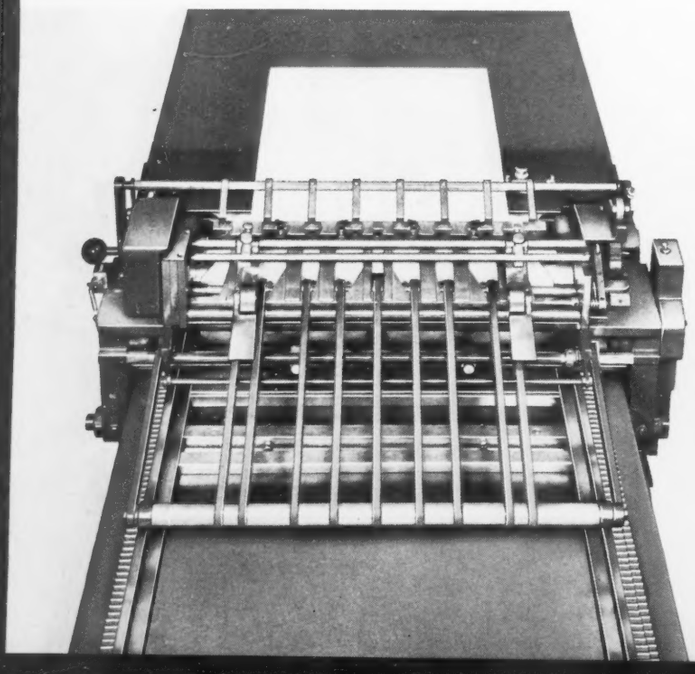
Level feed board helps to make feeding easy, holding sheet in position until it is fed to the guides. Side and front guides on No. 325G have micrometer adjustments. Side guide only is adjustable on No. 325A. There are eight grippers, insuring even pull on all sheets whether forms are open or solid.

Impression cylinder is readily accessible for make-ready or change of packing.

Inking system may be regulated for any form, light or heavy. Setting is the same as for a cylinder production press affording the most delicate adjustments of ink feed. Hand crank facilitates preliminary distribution in the fountain.

Controlled inking permits the printing of long runs of proofs that equal production press quality. Forms having many changes, such as calendars, posters, sales portfolios, and similar work can be printed profitably on Vandercook Power Presses.

Two large ductor rollers, supplemented by a double acting steel vibrator, pick up the ink from the fountain and carry it to the steel ink plate for further distribution.



No. 325A and No. 325G Vandercook Power Proof Presses are precision constructed, and accurate in impression. Inking is thorough. Delivery is automatic.

They are built to stand the heavy duty demands of newspaper production. They are so accurate that they can be used for premake-ready in the commercial printing plant.

The No. 325A Vandercook Proof Press will print a full size newspaper page in stereotype chase without printing the chase. The No. 325G will prove job and small automatic press forms locked in chases, making it possible to give positive check for line-up and register before forms are sent to press room or foundry.

No. 325A and No. 325G are easy to operate. Speed is readily controllable. A safety clutch stops the press if an object of abnormal height is accidentally left on the bed.

Features of the No. 325A and No. 325G Vandercook Power Proof Presses are illustrated below. Specifications are on the back page.

Two form rollers, three inches in diameter, supported by a double acting steel vibrator and riders give complete and even distribution of ink over the heaviest forms.

The ductor rollers are carried the length of both steel ink plates for each impression. The form rollers pick up well distributed ink from the forward ink plate.

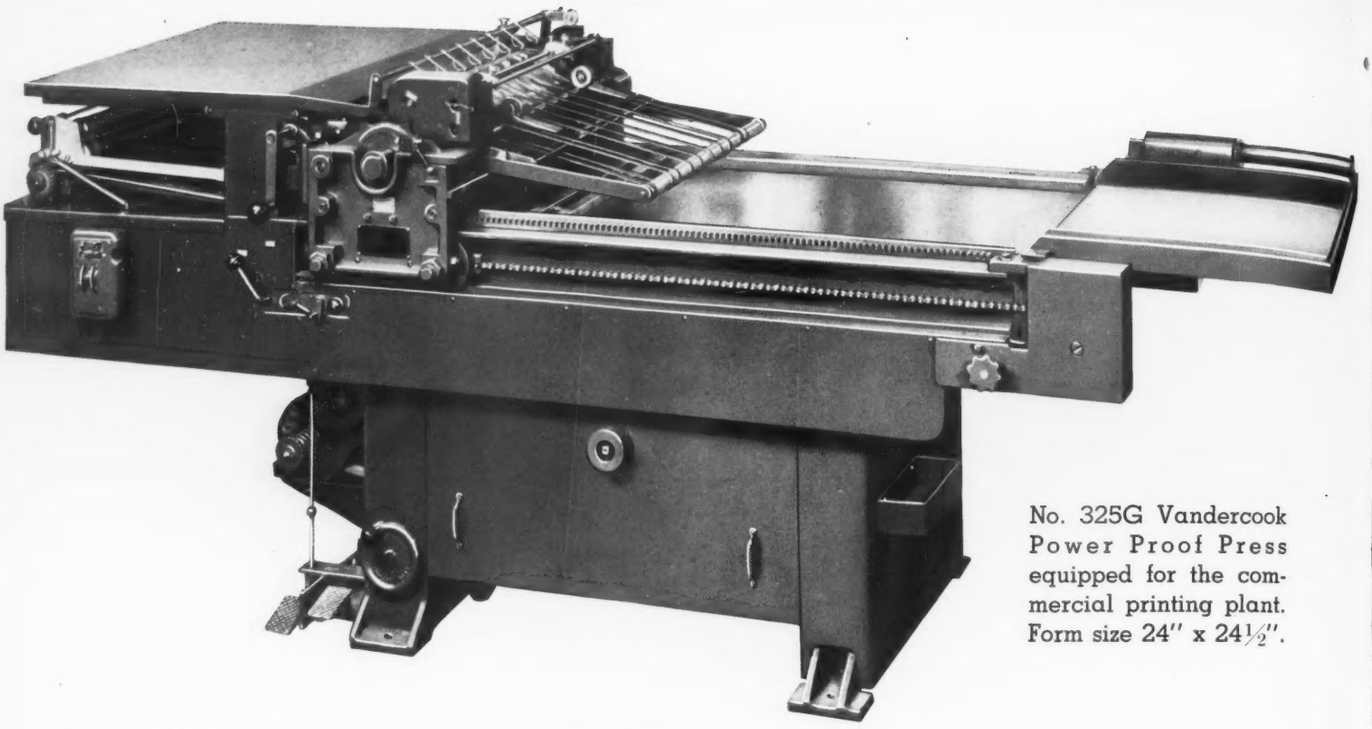
There is every provision for good coverage on all forms, whatever the speed of the press.

All parts of the inking system are readily accessible for quick wash-up.

Extra heavy impression cylinder, rigid bed, and precision construction throughout insure fine proofs of halftone or type forms.

The No. 325A Vandercook is equipped to prove newspaper pages in type high stereotype chases without printing the chase. Extra equipment follows:

1. Iron raising blocks to bring bed of press up to height of make-up trucks.
2. Automatic inking roller trip to lift inking rollers over foot of type-high stereotype chases. (Head of chase does not print because it is beyond printing line. Grippers are below printing line of cylinder and therefore do not strike high chases).
3. Adjustable bed (makes it possible to slide pages from truck to press and back without turning truck around).



No. 325G Vandercook Power Proof Press equipped for the commercial printing plant. Form size 24" x 24½".

No. 325A and No. 325G VANDERCOOK POWER PROOF PRESSES

No. 325G STANDARD EQUIPMENT

Automatic Delivery . . . Ink Fountain with two Rubber Ductor Rollers . . . Adjustable Front Guides on Gripper Bar . . . one set Composition Form Rollers . . . one extra set Form Roller Stocks . . . Counter . . . ½ H.P. A.C. or D.C. Motor . . . Galley Thickness Bed Plate . . . Tympan including Blanket . . . twelve extra Vandercook Die Cut Drawsheets . . . twelve extra Vandercook Die Cut Undersheets . . . Vandercook Handy Lockup Bar . . . one pound Vandercook Composing Room Black Ink . . . necessary Tools.

No. 325G SPECIFICATIONS

Bed size 25" x 46¼" . . . Form size 24" x 24½" . . . two Form Rollers 3" x 24" . . . two Ductor Rollers 2½" x 24" . . . floor space 3'9" x 9'10" . . . crated shipping weight 3700 lbs.

No. 325A STANDARD EQUIPMENT FOR NEWSPAPERS

All of the Equipment listed for the No. 325G Power Press with the exception of the Adjustable Front Guides on Gripper Bar which cannot be used when proving forms in type-high stereotype Chases. There is the following additional Equipment: four Iron Raising Blocks to bring Bed of Press up to height of make-up trucks . . . Automatic Inking Roller Trip to lift Inking Rollers over foot of type-high stereotype Chases (head of Chase does not print because it is beyond printing Line. Rollers are cut to clear sides) . . . Adjustable Bed (makes it possible to slide pages from truck to press and back to truck without turning truck around).

No. 325A OPTIONAL EQUIPMENT

Rubber Form Rollers instead of Composition Rollers.

No. 325A SPECIFICATIONS

Bed size 25" x 46¼" . . . Form size 24" x 24½" . . . two Form Rollers 3" x 24" . . . two Ductor Rollers 2½" x 24" . . . floor space 3'9" x 9'10" . . . crated shipping weight 3700 lbs.

No. 325A ORDERING INSTRUCTIONS

When ordering No. 325A Presses be sure to give height of makeup trucks to be used with Presses. Also send a proof of the page and type-high stereotype Chase. Proof must clearly show outlines of page, and inside and outside outlines of Chase.

VANDERCOOK & SONS

Main Office and Factory
900 North Kilpatrick Avenue, Chicago

Eastern Branch
216 East 45th Street, New York

Form 9502 PRINTED IN U.S.A.

Advantages of the No. 3-A C&G DELUXE MODEL SAW TRIMMER THAT HELP *INCREASE PRODUCTION*

A side-by-side comparison between the No. 3-A C&G Deluxe Model Saw Trimmer and any other saw definitely establishes C&G advantages that save effort and reduce sawing costs.

There are many EXCLUSIVE features which have resulted in repeat orders from C&G users throughout the country. You may see the C&G at the A.N.P.A. Mechanical Conference at Buffalo. Or write for fully illustrated circular and names of users near you.

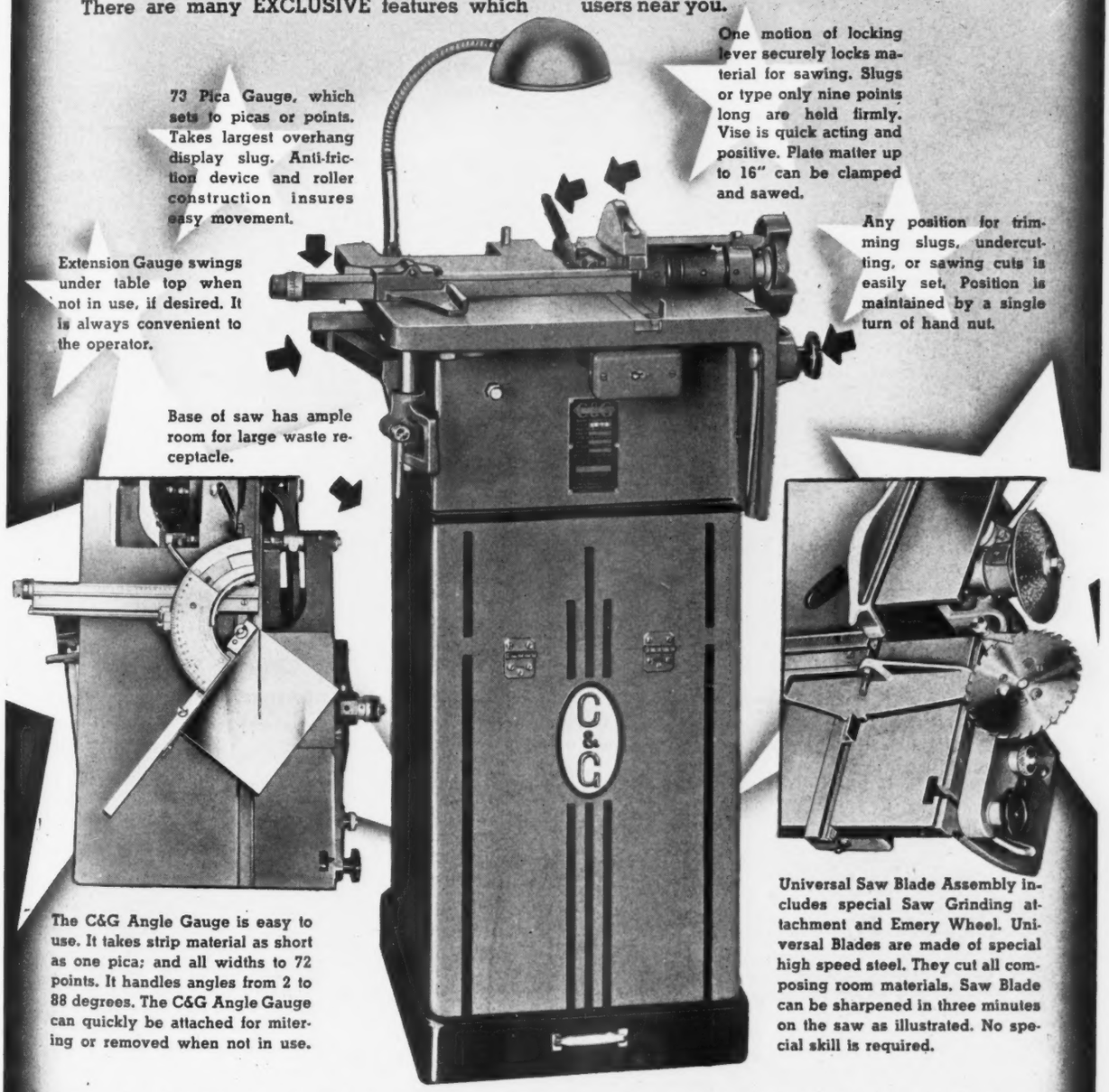
73 Pica Gauge, which sets to picas or points. Takes largest overhang display slug. Anti-friction device and roller construction insures easy movement.

One motion of locking lever securely locks material for sawing. Slugs or type only nine points long are held firmly. Vise is quick acting and positive. Plate matter up to 16" can be clamped and sawed.

Extension Gauge swings under table top when not in use, if desired. It is always convenient to the operator.

Any position for trimming slugs, undercutting, or sawing cuts is easily set. Position is maintained by a single turn of hand nut.

Base of saw has ample room for large waste receptacle.



The C&G Angle Gauge is easy to use. It takes strip material as short as one pica; and all widths to 72 points. It handles angles from 2 to 88 degrees. The C&G Angle Gauge can quickly be attached for mitering or removed when not in use.

Universal Saw Blade Assembly includes special Saw Grinding attachment and Emery Wheel. Universal Blades are made of special high speed steel. They cut all composing room materials. Saw Blade can be sharpened in three minutes on the saw as illustrated. No special skill is required.

MILWAUKEE SAW TRIMMER CORP.

610 EAST CLYBOURN STREET MILWAUKEE, WISCONSIN

FROM A Size Like This TO **A Size Like THIS**

Keyboarded at STRAIGHT-MATTER SPEED

COST-SENSITIVE executives have found that Blue Streak Super Display Linotypes reduce operating expense and speed production.

With the Super Display Wide-Standard magazines (35% wider than standard) matrices up to and including normal-width 36 point can be keyboarded from main magazines. This extra capacity permits keyboard composition of nearly all display lines that formerly had to be hand-set in matrices or foundry type. The mechanical superintendent of a large Eastern daily reports that his Blue Streak Super Display Linotypes are setting over 90% of all display composition.

Now, as never before, the elimination of lost motion and wasted effort is highly important to successful composing room operation. Blue Streak Super Display Linotypes assure speedier, more efficient production.

BLUE STREAK SUPER DISPLAY MODEL 33

BLUE STREAK SUPER DISPLAY 2-IN-1 MODEL 33

BLUE STREAK SUPER DISPLAY MIXER MODEL 35

TRADE LINOTYPE MARK

Whether it be grocery ads, display or heads, Blue Streak Super Display Linotypes will set them faster, with less effort and complication at a lower cost.

Super Display Model 33: Single Distributor . . . Four Wide-Standard 72-channel magazines.

Super Display Two-in-One Model 33: Single Distributor . . . Four Wide-Standard 90- and 72-channel magazines in any combination desired . . . variable speed assembler assuring easy assembly of any face from 5 point on up.

Super Display Mixer Model 35: Mixer Distributor . . . Two Wide-Standard 72- and Two Wide-Standard 90-channel magazines . . . variable speed assembler . . . Speedy Blue Streak Key-Mixing.

The Blue Streak Super Display Linotypes are equipped with all the Blue Streak features, One-Turn Shift,* Swinging Keyboard, In-Built Vertical Lift, Universal Precision Knife Block, Micro-Therm Precision Heat Controls—plus, of course, Linotype's easy operation and simple maintenance.

Self-Quadder, Thermo-Blo, Six-Mold Disk, Quick-Opening Knife Block, Mohr Lino-Saw—these applicable aids to production are important factors in display composition.

*At no extra cost!

TRADE LINOTYPE MARK

LINOTYPE Wide-Standard Main Magazines, are wider than any other magazine; are available in wide 90- or wide 72-channel styles, permitting standard keyboard layouts of matrices as large as full-width 36 point.

Linotype Memphis Family, Ionic No. 5, Metroblack No. 2 and indicated faces

Ask your Linotype representative to show you how the Blue Streak Super Display Linotypes will speed and simplify ad alley production for you.

Better Late Than Never! These interesting pictures were taken at the Craftsmen's San Francisco Convention last August. Except No. 4, the photos are the work of San Francisco's Henry Bettman

1—He inspects his registration envelope, does Robert G. Sutphin, Indianapolis Club's worthy Educational Chairman. Finds many tickets to convention events, a swell golden anniversary pencil, beautiful souvenir commemorative of printing's invention and among other things, a swellish welcome.

2—Photo-engraver Web Harrison pithily discusses "What's New in Photo-engraving" at Letterpress Clinic. Seattle's Harrison was also chosen president of Pacific Society Craftsmen's Conference.

3—You'd think famous Movie Actor (former printer) Guy Kibbee is delectable Bell Schultz's papa, but it isn't so. Miss Schultz belongs to Dallas, Tex., now Los Angeles insurance company claims her secretarial services. They did get along well together, though, at the fine banquet on Wednesday evening, August 7.

4—Henry Bettman sat down long enough from his incessantly nervous pacing about convention headquarters to pose. Bettman conceived idea of presenting all registered Craftsmen with set of six little de luxe books as a souvenir of the San Francisco convention. Produced with loving care by Craftsmen from various Coast clubs, the books (five have been finished so far) are prized possessions of those fortunate enough to receive them.

5—The dark glasses were used by Omaha's Gus Wallin to soften desert glare on a recent vacation trip in the wide open spaces. They also protect one's eyes under electric lights. To accompaniment of the Western ranger trio Gus sings "Home, Home on the Range" while crossing over to Treasure Island on the ferry.

6—"What! You want me to autograph *that*?" intimates Movie Actor Guy Kibbee when General Convention Chairman George Filmer, S.F. Club's President W. H. (Bud) Griffin and Junior Past President John M. Callahan ask him to put his moniker in that swell banquet menu and entertainment program booklet covered with the *beauteous* lady.

Intensifies Color Preference

DURING wars, the emotional and psychic makeup of humans is under stress. Their likes and dislikes, personal habits and views are changed. As the result of color studies in relation to war, the Color Research Laboratory the Eagle Printing Ink Company, Division of General Printing Ink Corporation, states the world may expect a more vigorous and impulsive use of color — not only in merchandise but in all forms of printing and advertising. The reason for this seems obvious enough when analyzed. When people are disturbed mentally, when their usual and rather even ways of life are suddenly disrupted, color has little appeal unless it matches the more excited conditions of their minds. In consequence, people seek the purer and more vital colors — because they alone seem to equal the intensity of present day life.

We entered this present era of color in the midst of the economic depression some ten years ago. Color distracted the minds of most of us and offered a pleasing escape. Now with war scares everywhere we will want even more of a thrill from it. Therefore look to brighter colors, having more punch to them — with patriotic blues and reds heading the list.

STUDY THE MARKET ON EQUIPMENT AND SUPPLIES BEFORE YOU BUY

ARE you in the market for new equipment or a change in your source of supplies? If so, you owe it to your plant owners to make a thorough study of the market for the type of equipment or supplies that you need before buying.

It isn't necessary for you to write a large number of manufacturers to get the information you want. Here's a way to make a most complete and thorough study of the sources of equipment or supplies:

First: Consult the **1941 Printing Equipment Catalog.** There you should find listed the manufacturers who make any given product.

Second: In the front of the **Printing Equipment Engineer Catalog** is a blue postage-paid card. Indicate on the card the manufacturers' equipment in which you are interested, sign your name, title, firm name and address and mail to us. We will see to it that you receive complete information. This is a quick and easy way for you to get up-to-date information on equipment and supplies. Use the card. It saves you time. If, however, you prefer to write direct to manufacturers, say you saw their advertisements in the **Printing Equipment Engineer Catalog** or in **Printing Equipment Engineer.**

If it's Printing Equipment and Supplies . . .
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THE PRINTING EQUIPMENT CATALOG

New Studies of Line-Composing Machine Matrix Reference Marks

By FRED GLEN SMALL

UNTIL recently, no attempt had ever been made to measure the visibility of the reference marks on line-composing machine contrast matrices as compared with non-processed new and used matrices. This has now been done. The new visibility tests were made by Dr. Matthew Luckiesh, director of the General Electric Company's Lighting Research Laboratory, at Nela Park, Cleveland, Ohio, and a colleague, Frank K. Moss, whose collaborative researches have been devoted to the science of seeing. Tests were made of (1) black-and-white processed matrices, (2) new non-processed matrices, and (3) used non-processed matrices. The relative visibilities of the matrices were determined by means of the Luckiesh-Moss Visibility Meter, Fig. 2, by two men skilled in the operation of that instrument. Each value given in the table below is the average of twenty readings of the meter. Each investigator made five readings of the visibility of each specimen in the order given in the table, and five readings of each specimen in the reverse order. Averages for the twenty readings are as follows:

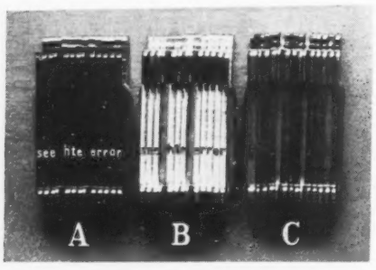


Fig. 1—Matrix reference marks as used in recent Luckiesh-Moss visibility tests. A, *black-and-white processed matrices;* B, *new non-processed matrices;* C, *used non-processed matrices.*

SPECIMEN	Relative Visibility
1. Black-and-white processed matrices	4.56
2. New (non-processed) matrices	2.70
3. Used matrices (non-processed)	1.10

In evaluating these figures in terms of eye comfort or the prevention of injury to the eyes, it is not technically accurate to say that the black-and-white matrices are four and one-half times as visible as, for example, the used non-processed matrices. However, the relative visibilities can be expressed in other and more informative ways, as follows:

Visibility in Terms of Type Sizes

SPECIMEN	Relative Visibility	Equivalent type sizes
1. Black-and-white processed matrices	4.56	9.4-point
2. New (non-processed) matrices	2.70	6.2-point
3. Used matrices (non-processed)	1.10	3.0-point

"In other words," quoting Dr. Luckiesh, "the No. 1 processed matrices have a visibility approximately equivalent to 9½ pt. type (printed with black ink on white paper), under the test conditions, as compared with the No. 3 matrices which have a visibility equivalent to 3-pt. type under the same test conditions. Incidentally, 3-pt. type is about the smallest type that can be seen by persons with normal vision under average lighting and seeing conditions when the type is printed with black ink on white paper."

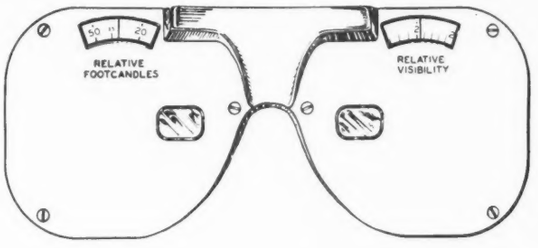


Fig. 2—The Luckiesh-Moss Visibility Meter, used for testing visibility of black-and-white processed and non-processed matrices. A *constant lighting factor was maintained throughout the tests.*

Certainty of Seeing Prevents Errors

SPECIMEN	Relative Visibility	Factor of safety
1. Black-and-white processed matrices	4.56	4.6
2. New (non-processed) matrices	2.70	2.7
3. Used matrices (non-processed)	1.10	1.1

This tabulation interprets the difference between processed and non-processed reference marks in terms of certainty of seeing. It has been established by scientific research that objects or characters with a relative visibility reading of 1, as calibrated on the Luckiesh-Moss Visibility Meter, can be seen but have no factor of safety to insure certainty of seeing. In other words, used non-processed matrices, as represented by the specimens used in these tests, cannot be read with any assurance of accuracy, even by persons with normal vision. Thus we find laboratory confirmation of a fact already well established in practice—the fact that more errors are bound to occur in the use of used non-processed as compared with processed matrices.

Fig. 3—Laboratory set-up with which the matrix reference marks were tested. Composing room tests (see Fig. 4) show similar meter readings under equivalent lighting conditions.

Here are the research laboratory's comments on this point: "Expressed in terms of certainty of seeing, it is obvious that certainty of seeing in the case of No. 3 is practically nil. There is no easy way of expressing the certainty of seeing of the others, but it is a fact that the certainty of seeing of No. 1, for example, is much greater. Obviously, when the certainty of seeing is nil the likelihood of error is great as compared with the other specimens which have greater visibility."

After The War Problems and Their Solutions

SEVERE economic shock, followed by temporary wild industrial activity and then by a period in which "anything can happen" were predicted as the probable aftermath of the war by President Thomas Roy Jones, of American Type Founders, in an address before the recent N.A.M. Winter Institute on Employment Relations held at Edgewater Park, Miss.

"The aftermath of the war will embrace a group of problems which may well make our present problems seem simple," Mr. Jones declared. "Certain it is that at that time we can expect governmental control and the imposition of governmental authority on a large scale."

These problems in his opinion will not be solved, however, "by any great national leader who may set himself up as the great Poobah." If they are to be solved at all, they will be solved by the units of industry acting in concert, striving toward a common end with the background of a profound realization of and respect for their social and economic responsibilities.

High Visibility Helps Imperfect Eyes

SPECIMEN	Relative visibility	Visual efficiency needed
1. Black-and-white processed matrices	4.56	50
2. New (non-processed) matrices....	2.70	70
3. Used matrices (non-processed)....	1.10	100

A reading of 1 on the Luckiesh-Moss Visibility Meter means that the object or character tested can barely be seen

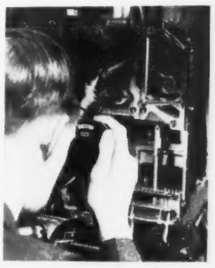


Fig. 4—Testing visibility of matrix reference marks as they appear to the operator in assembling elevator of the line-composing machine.

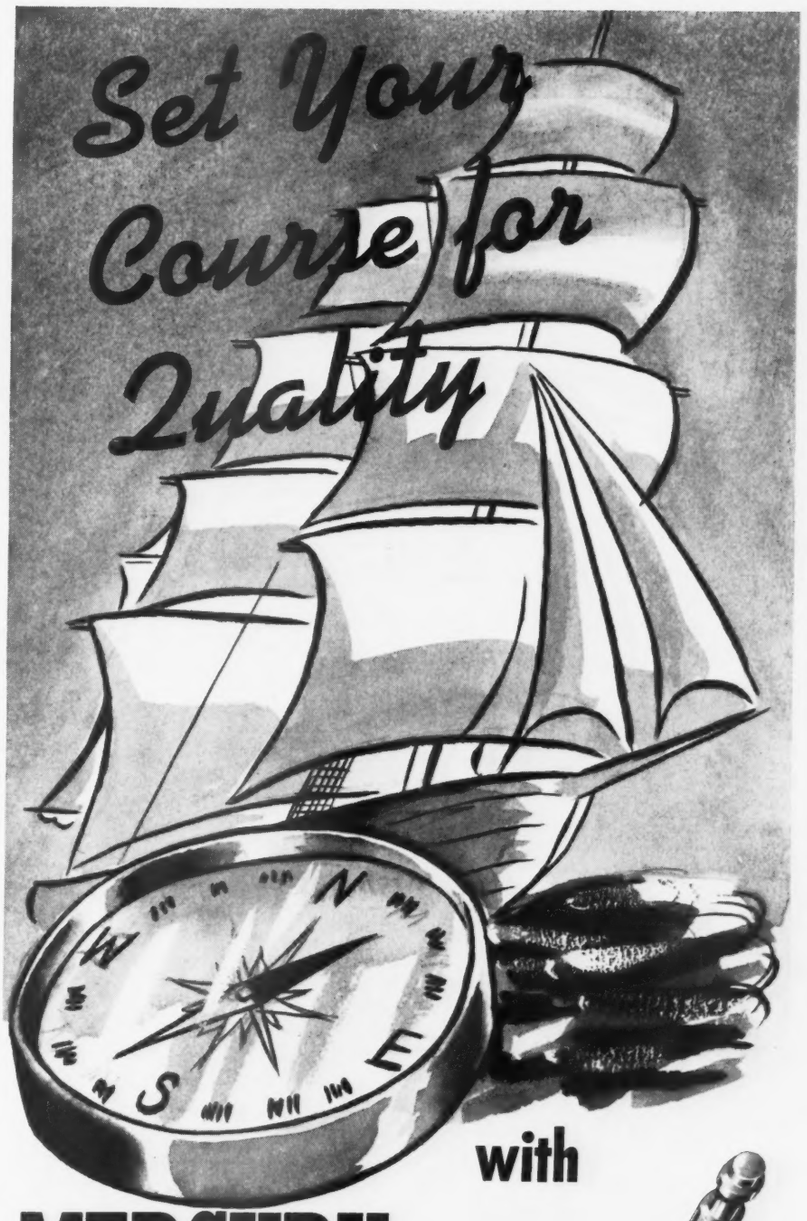
by persons with normal eyesight. Normal eyesight, unfortunately, is by no means universal among the operators of line-composing machines. According to data published by G. M. Gould, from 40% to 60% of all printers have defective vision in a measurable degree. Other data, compiled by the U. S. Public Health Service, shows the prevalence of defective vision in various age-groups throughout industry to be as follows:

Under 20	23%	40 to 50 years	71%
20 to 30 years	39%	50 to 60 years	82%
30 to 40 years	48%	Over 60	95%

Referring to visual efficiency in connection with matrix reference marks, Dr. Luckiesh says: "Interpretation of the visibilities of the three specimens in terms of visual efficiency is readily accomplished. The visibility of No. 3 is so low that the visual efficiency of an individual must be 100 (normal vision) in order to see it under ordinary seeing conditions. However, the visibility of No. 1, for example, is so high that a person with eye defects so great that his visual efficiency is only 50% of normal can see No. 1 under the test conditions, which were the same for all specimens."

Low Visibility Injurious

Studies made in the General Electric Company's lighting research laboratory, over a period of many years, have proved that better seeing conditions—better lighting, improved contrast, etc.—help definitely to increase production. However, neither quantity nor quality of production, nor both, are in themselves a safe guide for judging seeing conditions, because of a peculiar ability of the human seeing mechanism to adapt itself to grossly unfavorable seeing conditions, even at a considerable cost to the individual. For example, in short visual tests so severe as to cause extreme fatigue, the visual efficiency of the subjects tested, measured in terms of speed of reading, showed little or no reduction as compared with similar tests under favorable seeing conditions. Interesting data on this subject, and on seeing in general, are available in a number of books, notably *The Science of Seeing*, by Matthew Luckiesh and Frank K. Moss, and *Seeing and Human Welfare*, a less technical presentation, by Dr. Luckiesh.



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RAPID ROLLER CO.
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TRENDS *in lithography include increasing film use in color, photograhic color correction, dot etching and staining for hand correction*

By WILLIAM FALCONER*

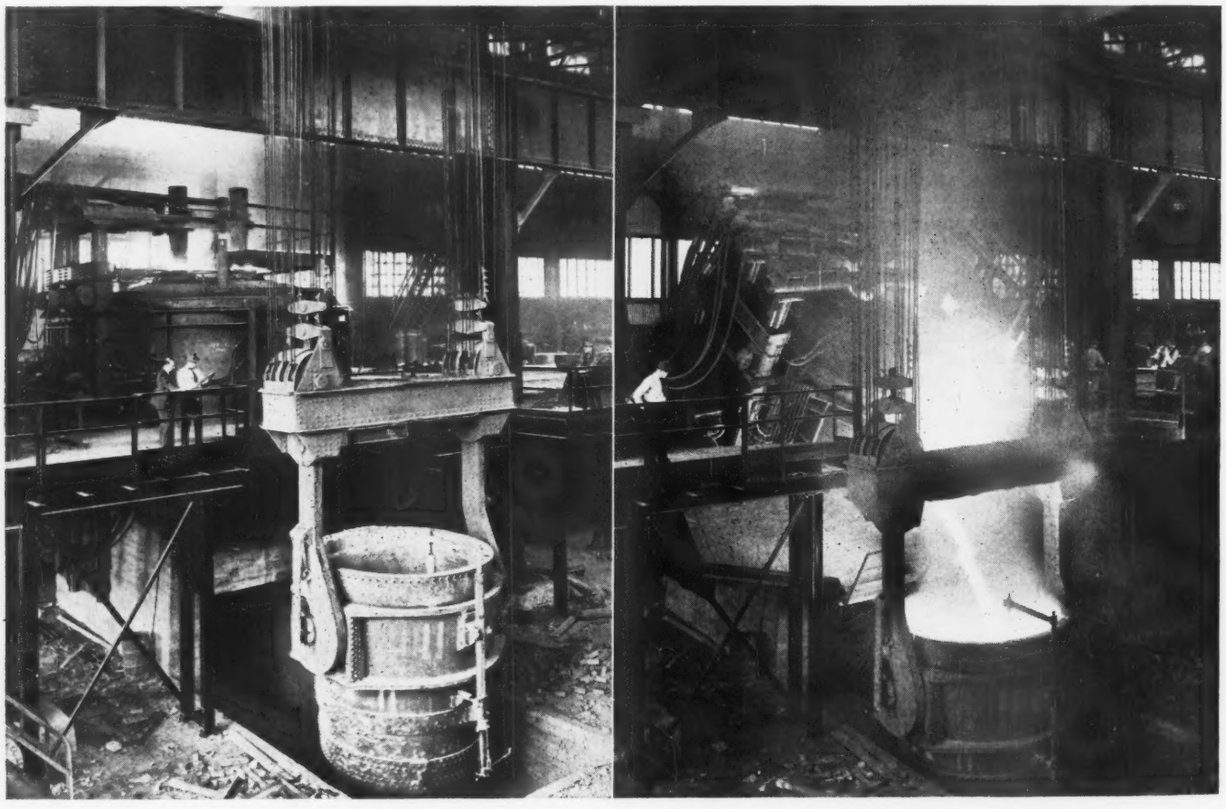
*Eastman Kodak Company. Talk given before the Litho Club of New York, February, 1941.

COLOR reproduction in lithography is such a fascinating and ever-changing subject that every day new ideas and processes are appearing. Nevertheless in all of these some definite trends are apparent: One such trend is the increasing use of film instead of glass, another, the increasing use of photographic means of color correction and still a third, the almost exclusive use of dot etching and staining for hand correction.

Let us mention a few salient points about dot etching. First of all, an ideal dot etching material should give a hard dot without too much fuzz. On the other hand the formation must be such that the edges will etch without affecting the core. With such a material the responsibility for good etching rests with the photographer as well as the artist. The negative should be exposed so that full development can be given. Furthermore, at least a 1:90 screen ratio should be used. This means long screen distance, and small lens apertures with consequent long exposures. Thus a material of fairly high basic speed should be employed. Development should be as nearly through the emulsion as the material and developer will allow, indicating the use of a vigorous developer. Fixing should take place in a solution which does not harden the emulsion too much as excessive hardening results in slower penetration of the etching solution.

It is common practice to rinse large plates slightly under running water before placing them in the fixing bath. This practice often results in the formation of a dichroic fog which may not be apparent until the etching has begun. Then it shows as a brown stain either between the dots or outlining the original dot. Rinsing should be for at least two minutes or an acetic acid rinse bath should be employed when possible. Above all, for uniform results some method of temperature control of solutions is imperative.

Several different procedures of dot etching are in common use. In general, where practical, the emulsion should be kept wet during etching. Completely saturated emulsions etch more rapidly and thus give sharper drawing lines.



New 65 Ton Unit Brings Timken Electric Furnace Production to 360,000 Tons Per Year

Almost on the twenty-fifth anniversary of the company's entrance into the steel manufacturing business, The Timken Roller Bearing Company began operation of a new 65 T. electric furnace and stepped up production to 360,000 T. per year.

This new furnace supplements a battery of six other units including the famed 85 to oval shape furnace which has been in production nearly 15 years. Other furnaces in the battery include one of 60 to capacity installed in 1938, two of 35 T. capacity which were enlarged to that size from 25 T. in 1927 and one of 20 T. capacity now being installed.

The Timken Company began electric steel production in August 1916 with five, 6 T. furnaces. These were all dismantled in 1927.

In addition to the electric furnace capacity, three 100 T. open hearth furnaces add 17,000 tons per month to Timken's steel output.

H. F. Walther, assistant superintendent of the Timken melt shop explained electric furnace operation to local newspapermen a few minutes before the new Timken 65 T. furnace poured its first heat.

The largest round electric furnace and the second largest in the world, this steel producing giant located in The Timken Roller Bearing Co. melt shop at Canton, Ohio poured 80 tons on its first heat April 16.

Extensive tests in our research laboratory have demonstrated the advantages of ferricyanide-hypo over cyanide-iodine for etching. In addition to the less poisonous character of the ferricyanide it also etches further without "blinding" the dot. Further, it does not have the softening action of cyanide. Most shops use saturated solutions of both ferricyanide and hypo and the operator dilutes to individual preference.

Films are most conveniently etched on flat or slightly slanted light tables where weights are used to keep them flat.

In following the trend toward increased use of film in color, Eastman recognized the need for a film with better register and at the same time embodying ideal dot formation for etching. This was forthcoming as Kodagraph C.T.C. Pan. film. It is a direct screen color separation material designed to replace glass plates. With reasonable care it offers the advantages of close register, flexibility and eliminates breakage. The thickness is about .0085 in. so contact printing through the base is not advisable. This film allows enormous latitude in dot reduction.

With Kodachrome being more and more used as copy, improvements in methods of separation and color correction are constantly in demand. One of the most promising is the use of diffuse masking on the Kodachrome. A contact mask is made through the thickness of the Kodachrome using an off center light source. During the exposure the printing frame is whirled, thus giving a predetermined amount of undercut to the image. This mask should have a density first of easier register; second, of retaining a sharp image since the Kodachrome image is still toward the lens and the mask is blocking out only areas, and third, it not only reduces contrast but gives color correction as well. The filters used over the light source in making the mask used for the process blue, process red and black separations are Wratten 23A and 56 (together) and the combination used for the yellow is 15 and 59. The Kodachrome is mounted, emulsion up, on the mask and the separation is made in the camera or by contact.

With new methods, new materials and new equipment crowding into the picture, still another trend of the lithographic industry is apparent: The fading of an art and the foundation of a science — the science of lithography.

To Promote Hartford, Conn.

Printers and printers' suppliers, in Hartford, Conn., have organized the Advertising and Printing Crafts Trade Board, a new division of the Hartford Chamber of Commerce. The group, among other objectives, intends to promote Hartford as a graphic arts and advertising center of Connecticut.

J. M. K. Davis heads the executive committee consisting of Hugh Brown, secretary; William H. Rourke, Rourke-Eno Paper Co.; William H. Bulkeley, Kellogg & Bulkeley; Matthew E. Dowd, Dowd, Wylie and Olson; H. Ernest Hopkins, McNie and Hopkins; and J. Peder Andersen, Printers' Service, Inc.

But

DON'T GUESS ON PAPER

Remember that a letterhead must *sell* as well as *tell*... it must be well designed and then well printed on a distinctive good quality *watermarked* paper that should be economical in production. ADIRONDACK BOND meets these requirements. So instead of guessing, specify ADIRONDACK BOND—in bright white and 12 attractive colors with envelopes to match—and, be sure to

Consult your Printer

FOR OVER 10 YEARS, International Paper Company has been advising users of printed advertising to "consult your printer". We took our own medicine, we CONSULTED THE PRINTERS! The result is revealing. Send for your free copy of, WE CONSULTED THE PRINTERS! and learn how to get the 1941 BOOK OF LETTERHEADS.

INTERNATIONAL PAPER COMPANY

220 EAST 42nd STREET, NEW YORK, N. Y. BOSTON · CHICAGO · CLEVELAND

AN INTERNATIONAL PAPER VALUE

Made by the Makers of: ADIRONDACK BOND & LEDGER · INTERNATIONAL MIMEOSCRIPT · INTERNATIONAL DUPLICATOR · BEESWING MANIFOLD · TICONDEROGA BOOK · TICONDEROGA TEXT · INTERNATIONAL TI-OPAKE · CHAMPLAIN BOOK · SARATOGA BOOK SARATOGA COVER · INTERNATIONAL OFFSET

Technical Discussion Improves Machinists' Maintenance Methods

THE benefits of organization contact can very well be applied to composing machine machinists. These men should have a lot in common regarding the technique of composing machine maintenance which naturally would be reflected in better plant maintenance. A going association is that of the Minnesota Association of Line-casting Machinists. We note also that the machinists are being encouraged this year to discuss their technical problems by having a special period set aside for them at the Iowa Mechanical Conference in Davenport, Ia. It has also been customary for the machinists to have a get-together at the annual meetings of the Illinois Mechanical Conference. Herb Young of the Pasadena (Calif.) *Star-News*, presided at the machinists' session during the April Southern California Mechanical Conference. Attendance, however, of machinists at other mechanical conferences has been more or less sporadic.

At the 1941 meeting of the Minnesota Machinists Association held at Minneapolis, February 15 and 16, there were approximately 132 registered. Officers of the association are: President George L. Curle; Vice President, J. T. Staubitz, and Secretary-Treasurer, H. E. Magnus.

President Curle opened the afternoon round-table discussion on Saturday and turned the meeting over to Chairman J. R. Richardson. Twenty problems had been submitted for discussion, but at 4:30 o'clock only five had been disposed of. A halt was called, to give Fred Konkel an opportunity to demonstrate the Curle Slug Corrector.

The Sunday morning (Feb. 16) mechanical demonstration in the new plant of the Minneapolis *Star-Journal* in charge of Chief Machinist G. W. Wraggett and assistants was interesting and educational in nature.

M. M. Caldwell of the Geo. H. Morrill Co., acted as toastmaster at the banquet. He introduced Joseph Hicks of the St. Cloud (Minn.) *Times*, who reviewed the club's progress. He then introduced the delegations from North and South Dakota, Wisconsin, Nebraska and Iowa.

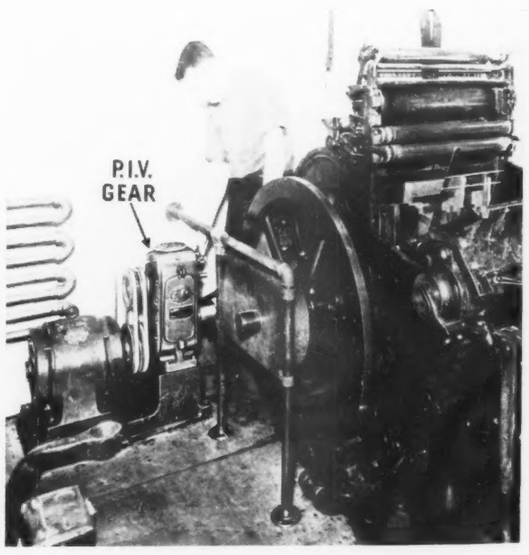
The speaking program was participated in by the following persons: President Frank McCaffrey of the International Association of Printing House Craftsmen, Seattle, Wash.; Ray Moore of Intertype Corporation; Claude Perkus of Imperial Type Metal Co.; Guy Chappell, Mechanical Superintendent of the Iowa City (Ia.) *Press-Citizen;* Ed Funk, Composing Room Superintendent, Waterloo (Ia.) *Courier;* Hawf & Hawf, St. Paul (Minn.) *Dispatch;* Fred M. Landon of Dunwoody Institute, and Paul Auken, Minneapolis head of the Graphic Arts Association.

Plans are being formulated to make the next meeting of even greater importance and greater attendance.

Transmission Units Permit Variable Speeds

SOMERVILLE Paper Boxes Ltd., of London, Ontario, has equipped three Laurette platen one-color presses with variable speed power transmission units (Link-Belt P.I.V.), by means of which it has been possible to increase production as much as 33⅓%. These variable speed gear transmission units are connected between the 2 h.p. Lancashire, 440 r.p.m. motors and the press drive shafts. Each variable speed transmission is a vertical unit with a 3-to-1 ratio. The variable speed shaft has a range of from a minimum of 348 r.p.m. to a maximum of 1043 r.p.m. This makes it possible to operate the presses at whatever speed is wanted within the operating range for the particular work in hand. Speed changes are made by turning the handwheel shown in the illustration.

Formerly, before the installation of the speed controls, the presses had one operating speed, by which an average of 900 impressions per hour were obtained. An average of 1200 impressions is now possible.



Link-Belt P. I. V. Variable Speed Transmission Power Unit connected to a Laureate platen press.

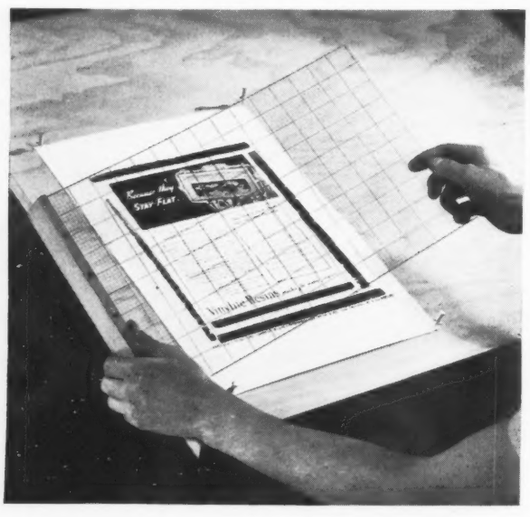


Illustration shows method of application for using Dexine Gauge for checking proofs for squareness. The pica and inch-square ruled Vinylite plastic material is claimed to hold accuracy indefinitely.

For Checking Proofs

When checking proofs for squareness and to see that type is correctly positioned, a T-square and triangle often are used. The new Dexine gauge serves the purpose in place of draftsmen's tools. It is ruled accurately in pica and inch squares. In making the new gauge, for Dexion, Ltd., The Hopp Press, Inc., of New York, prints ruled lines on the underside of a Vinylite plastic sheet 0.040 in. thick, clear, and matte-finished, then press polishes both sides of the sheet.

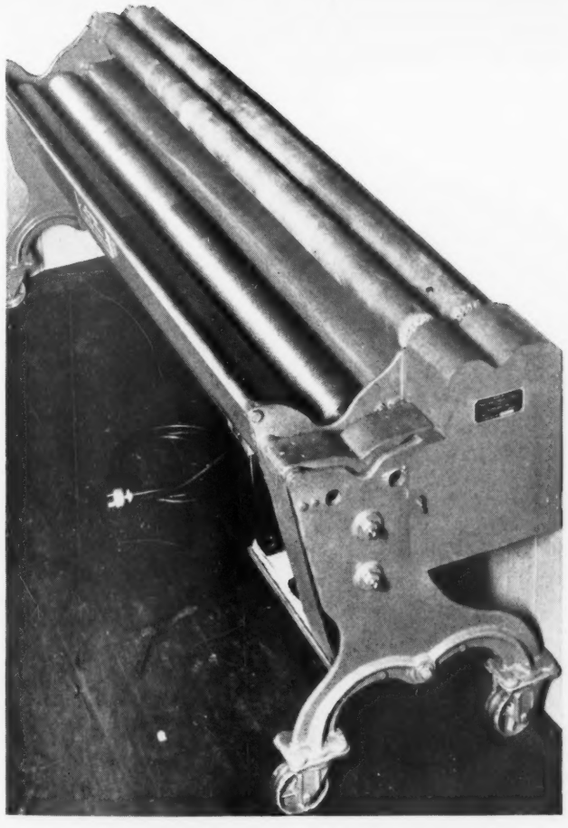
Vinylite plastic sheet is used because it is claimed, no warping or curling has ever been known to occur, and because its shrinkage during press polishing is practically negligible, thus assuring accuracy in the gauges. Because the plastic is dimensionally stable the gauge is said to hold its accuracy indefinitely.

WILD & STEVENS, INC.

Printers' Rollers

5 PURCHASE ST., BOSTON, MASS.

Every Type of Printing Roller a Printer Needs



The HI-SPEED roller cleaner takes any size of roller, and any length up to 72 inches; and no adjustment is necessary for different roller sizes. It is compact and sturdy, with a minimum of working parts, and a self-contained motor drive. It can readily be moved about the pressroom to suit the convenience of the operator.

WASH YOUR PRESS ROLLERS

Quickly • Easily Economically

With the HI-SPEED roller cleaner, which ends the necessity of hand cleaning, at a substantial saving in time, money, and effort.

With the HI-SPEED roller cleaner, nothing is used but the machine and a solvent, preferably kerosene. No rags are required, and the solvent can be used repeatedly. In many shops the savings thus effected will pay for the HI-SPEED roller cleaner in a short while.

With the HI-SPEED roller cleaner, cleaning is more rapid and more thorough, the rollers are kept in better condition and will last longer, floors are freed of oil and ink from roller washing, the fire hazard is decreased, and the possibility of damaging rollers is greatly lessened.

With the HI-SPEED roller cleaner, rollers with inks of different colors can be cleaned in the same solvent, so quickly and completely that the time lost in changing colors on a press is materially shortened.

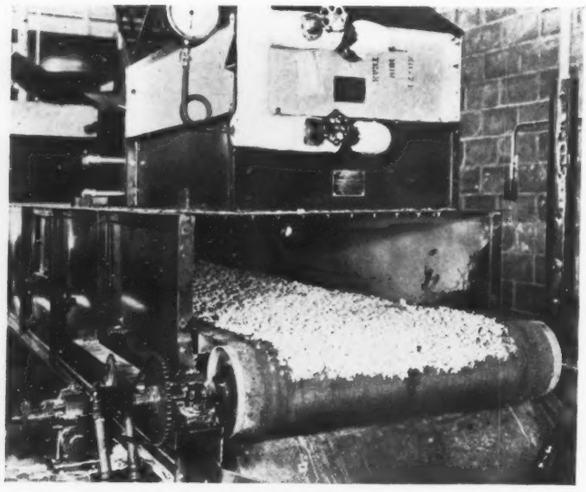
Ask us for full information about this useful aid and accessory to the printing craft.

PRINTING PRESS PARTS AND SUPPLIES, INC.

221 HIGH STREET

BOSTON, MASSACHUSETTS

OPEN NEW THIOKOL UNIT — 6,000,000 POUND ANNUAL PRODUCTION PLANNED



To take care of the increasing use of Thiokol synthetic rubber, Thiokol Corporation and The Dow Chemical Company have opened for production a new plant in Midland, Mich., where the main works of the latter company are located.

The new Thiokol plant is understood to have a capacity of more than 150,000 pounds per month, which together with other Thiokol plants now operating and planned will turn out 6,000,000 pounds of synthetic rubber annually.

Thiokol Corporation officials have already begun to lay plans for the construction of still another unit. This unit would increase present total production capacity by 50%.

Thiokol is used in the construction of such articles as gasoline service station hose, fuel oil hose, seals and gaskets for every type of industrial equipment, automotive parts, printing press rollers, and many other rubber or part-rubber products required to function in the presence of oil, gasoline, alkalis, acids and other solvents and chemicals.

In the illustration, pellets of Thiokol synthetic rubber are shown leaving a conveyor belt at the Thiokol plant, Midland, Mich. Made of such raw materials as salt, gas and sulphur, all readily available in U. S., Thiokol can be produced in considerable volume in event of a far East blockade, company officials state.

Tabloid *streamlined through regular daily production in newspaper plant — Proof system and page index cards facilitate makeup*

By W. V. COWGILL*

*Mechanical Superintendent, *The Cleveland News*.

POSSIBLY there may be some interest to readers of *Printing Equipment Engineer* in what might be termed streamlined production in the plant of *The Cleveland News*. In addition to getting out its regular 24-36-48 page daily papers the *News* mechanical force handled in December a 104 page tabloid size annual edition of the *Annual Review Number* of the *Catholic Universe Bulletin*.

Originally, *The News* was equipped for six-day and Sunday-paper operation. Since discontinuance of the Sunday paper, some outside publication work has been produced. The seven-day publication equipment enables us to adapt it to the manufacture of extra periodicals like the one outlined in this article.

View in makeup department of The Cleveland News *composing room. The cardboard "flags" or index cards carry page numbers (two for each of the 52 full size newspaper chases) so the makeups can locate the pages readily in which the 900 advertisements are to be placed. The 104 tabloid pages for the* Annual Review Number *are made up at one time.*

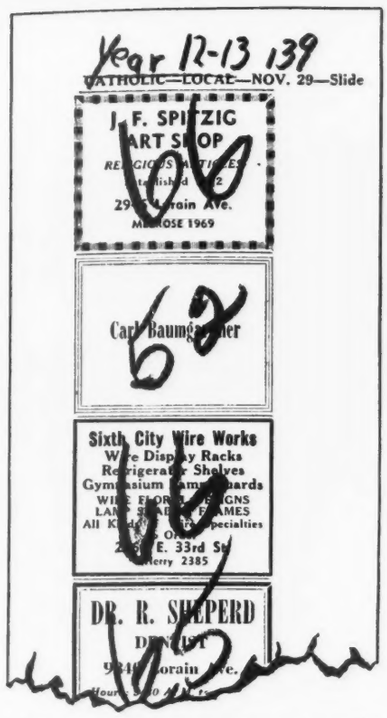
All of the details for handling the *Annual Review Number* will not be discussed in this article — they're only too obvious to the plant executive, but we will describe some of the means which enables our organization to thread this production through the regular work day force.

Copy comes into the composing room in the usual way, of course, except that a guide line is placed on the copy to indicate that it is not regular *News* material. All editorial type and advertisements are taken to the regular dumps by the operators and ad men, but the type is placed on separate galleys from the newspaper type. All of the proofs for the *Annual Review Number* are taken on yellow paper to differentiate this material from the regular *News* material. All editorial type and advertisements are filed in separate racks under the makeup tables reserved for the tabloid.

We employ a very fast makeup system in handling the tabloid, most of the details for which were worked out by Composing Room Superintendent Charles Buttermore. In the case of the 104-page edition, 52 chases (each of two-page capacity) are aligned on tables for the makeup.

A marked-up dummy of the 104-page issue of the *Annual Review Number* is furnished to us, in which are marked the exact position of editorial articles and advertisements, page by page.

To facilitate makeup, all of the 52 chases carry two "flags" or tickets (one for each page) with the page number printed in large type on both sides of the ticket. One chase carries pages 1 and 104; another will carry pages 50 and 55; still another carries pages 2 and 103 and so on for the saddle-stitched book. You will know the page index cards are appreciated by the makeup men when we tell you there were approximately 900 sepa-



Miniature reproduction of yellow-paper galley proof employed in The Cleveland News *composing room for 104-page tabloid size* Universe Bulletin Annual Review Number. *The figures marked in with crayon indicate to the makeup on which page each advertisement is to be placed.*

rate advertisements in the tabloid issue we printed in December.

As has been mentioned above, a complete dummy is furnished to us. In addition, a representative of the *Annual Review Number* marks on the yellow galley proofs with black crayon the page upon which each advertisement is to appear. This procedure together with the easily-read form markers, enables the makeup men to assemble the advertisements and editorial matter rapidly with the least possible lost motion.

Exclusive of presswork, three days are allowed for production — two one-shift days in the composing room and one day in the stereotype room, during which time 104 two-page plates are cast and routed.

In the pressroom straight runs are employed. Two press runs are necessary to produce the 104 page edition. The first 64 pages (two up) are printed on Monday morning. After this run is completed, the press is stripped and the second run (in this case, 40 tabloid pages, folioed 33 to 72) are then printed.

On account of mechanical limitations of the presses, "proofs" are pulled as soon as the presses have been plated and are carefully looked over. After everything appears to be right, presses are started at production speed. Minor tension and ink adjustments are then made. Stock used is 34 lb. special newsprint, identical with the paper made for the New York daily *P.M.*

We believe it is somewhat unusual to handle a job of this size and character at the same time as regular daily editions are being made, and all smoothly and without confusion, interruption or delay.

New Ludlow Faces

Lining Litho Light and Lining Litho Bold, are announced by the Ludlow Typograph Company as available in matrix form for Ludlow hand-set, slug-cast composition. In each of these weights, there are ten point sizes, ranging from the smallest 6 point (6-pt. No. 1) to the largest 18 point (18-pt. No. 2) and comprising four sizes of 6 point and of 12 point, and two sizes of 18 point, assorted sizes being shown here in both weights.

POWER PLUS IN A Limited Space

Specimen lines, 30 pt. size, Ludlow's Franklin Gothic Extra Condensed. Matrices available

LUDLOW LINING
LITHO—LIGHT & BOLD

Example of Ludlow's Lining Litho Light and Bold

Franklin Gothic Extra Condensed is now available in matrix form in sizes from 18 to 72 point.

Their Choice Is EDES

Herald Tribune
Roosevelt Says Fleet Can Enter War Zone; Doesn't Reveal if He Plans to Use It There; Patrols Operating 2,000 Miles Out Now
Richmond Times-Dispatch
Turkey Gets Hitler Note; Britain, Bulgaria Break; U. S. and Mexico Open Talks on Defense Alliance
Cape Cod Standard-Times
Craigville Restrictions Lifted by Town Vote
PM
Deportation For Jan Valtin
Hitler's Arguments Through The Mouths of U.S. Senators

It is not surprising that first place winners in the four major classifications of N. W. Ayer's 1941 newspaper typography exhibition are Edes customers. We congratulate the N. Y. Herald-Tribune, Richmond Times-Dispatch, Cape Cod Standard-Times and The Newspaper, P.M. Publishers who take particular pride in the appearance of their newspapers demand perfect etching zinc and a flawless flat surface with gauge accuracy guaranteed.

THE EDES MFG. CO.
Plymouth, Mass.

EDES ROTO-GRIP FINISH ZINC

TEARS LIKE A POSTAGE STAMP

— *Sticks Like HELL!*

New
IT TEARS EASILY at the holes to any length . . . . . like postage stamps . . . . .
Magnified — Shows air vents which permit escape of steam and which expedite drying. Thru these perforations more glue is exposed to the air and the felt dries quickly and sets permanently.
VENT-A-FLEX
IT'S SELF-VENTILATING
the greatest improvement in matrix backing since the advent of ready gummed felt
GUMMED PACKING FELT
The Old Way
When ordinary felt is heated the moisture on the adhesive generates steam which forces the felt to part at the bond and lift from the mat.
The New Way
Ventilated Felt allows the steam to escape through air vents, thus the adhesive dries quicker and the bond is positive.
Wrap a strip of ordinary felt around your finger. It will crack and spring out straight again when released.
Ventilated Felt is pliable as linen, curves easily without cracking and stays in place.
MORE FLEXIBLE
Make This Test
AMERICAN PUBLISHERS SUPPLY
P. O. BOX 131 — WEST LYNN, MASS.

TEST THIS SAMPLE

★

Moistens Quicker
Is More Flexible
Forms with the Mat
Sets Instantly
Dries Faster
Shrinks with the Mat
Adheres Permanently
Does Not Skid
Tears Easily

★

Write for SAMPLES

A. P. S. *VENT-A-FLEX*

The Perforated Backing Felt

Manufactured under Patent
No. 1,967,444

Four-Color
and the

m

R

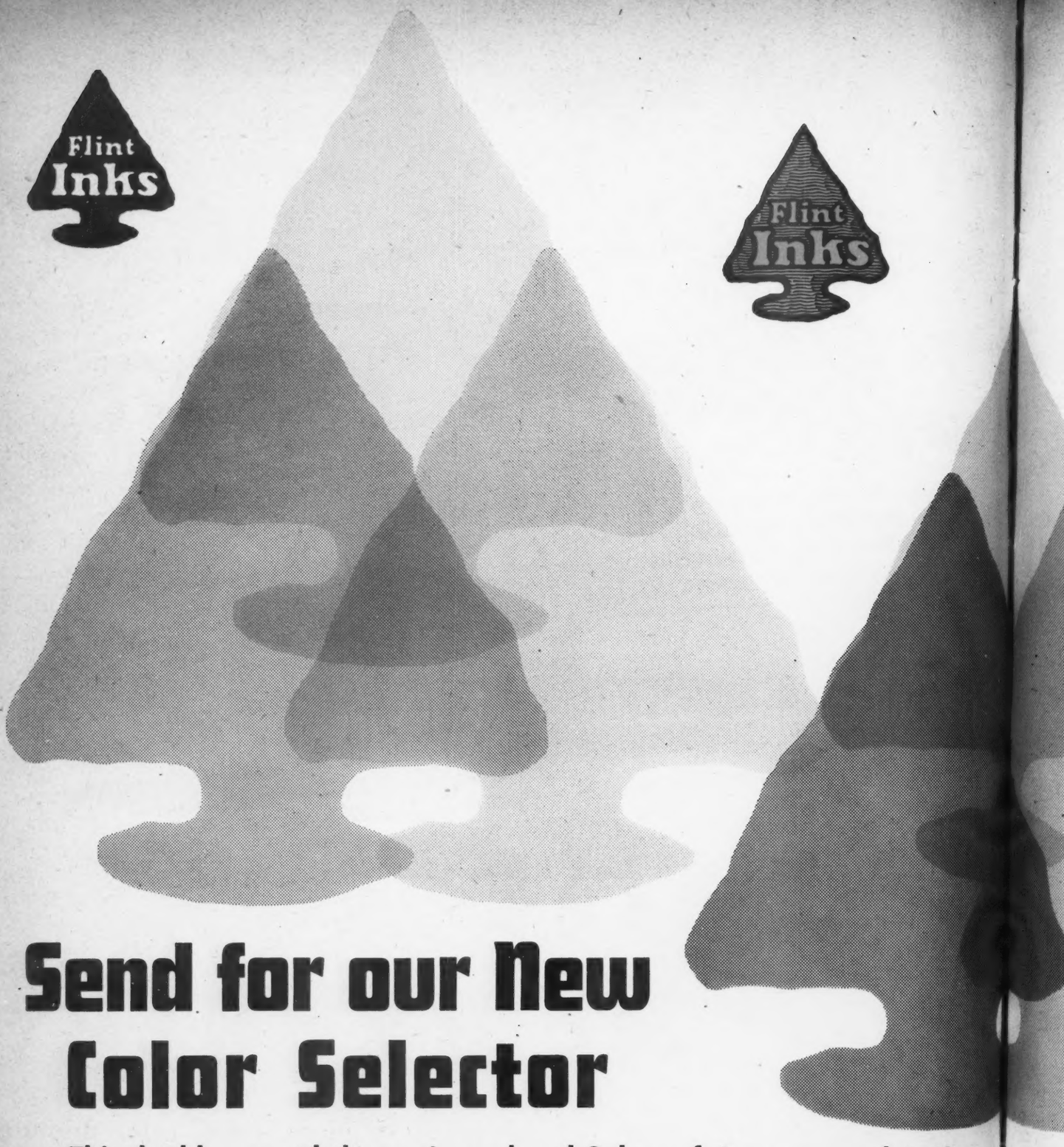
Four-Color Plates, courtesy of the Chrysler Corporation and the Lee Anderson Advertising Company.

NEW LIFE *for* NEWSPRINT

Flint Inks

Amazing advances in high speed color printing are being hailed wherever Arrowhead Colors are used. There's a new bright, clean brilliance to these colors, made doubly important because of perfect press performance.

ARROWHEAD BLACK & COLORS



Send for our New Color Selector

This double spread shows Arrowhead Colors of the approved A.N.P.A. shades, superimposed in solids, halftones and quartertones. Additional copies of this insert will be mailed upon request. Better still, let us send you our new Color Selector, showing eighty-two brilliant new shades of fine Arrowhead Newspaper Colors.

Every Flint Ink is a Go

ON YOUR OWN PRESS — that's the right place to judge and fully appreciate Arrowhead Colors. The extra added brilliance will bring you many compliments from advertisers and the flawless press performance will lighten your labors. There'll be no plugged screens, no piling on packing and no unsightly offset. You can quickly prove all this ON YOUR OWN PRESS.

Go Ink!

This insert was printed with the approved A. N. P. A. shades of Arrowhead Colors

Howard Flint Ink Company

DETROIT HOUSTON NEW ORLEANS CHICAGO DENVER CLEVELAND ATLANTA INDIANAPOLIS

PRECISION BEARINGS

Separable (Magneto) Ball Bearing

Single Row Ball Bearing

FOR EVERY LOAD, SPEED AND DUTY

108 DISTINCT SERIES

BALL, ROLLER AND THRUST

OVER 3000 SIZES

⅛" to 21" Bore—Metric and Inch Sizes

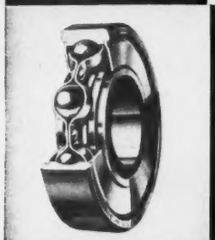
Write for the Catalog and Engineering Counsel

NORMA-HOFFMANN BEARINGS CORP'N.—STAMFORD, CONN., U. S. A.

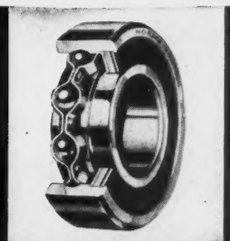
"NORMA-HOFFMANN"

Litro ("CL") Composition Retainer Ball Bearing

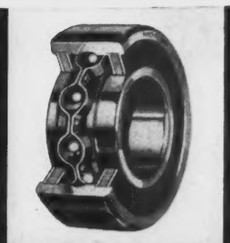
Double Row Self-Aligning Ball Bearing



Shielded Type Single Row Ball Bearing

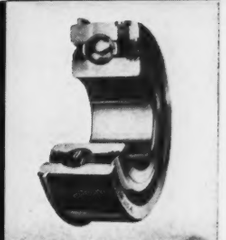


Single Felt Seal Ball Bearing

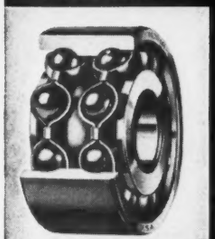


Double Felt Seal Ball Bearing

9000 Series (Feltless) Sealed Ball Bearing



"Cartridge" Fully Sealed, Refillable Type Ball Bearing



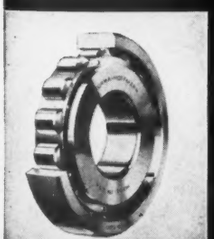
Double Row Ball Bearing

Extra Light Type Ball Bearing

Duplex Type (Two Direction) Angular Contact Ball Bearing

Angular Contact Ball Bearing

Single Direction Ball Thrust Bearing

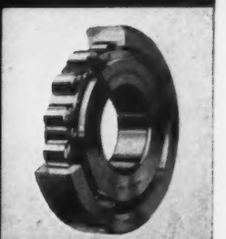


Standard Cylindrical Roller Bearing

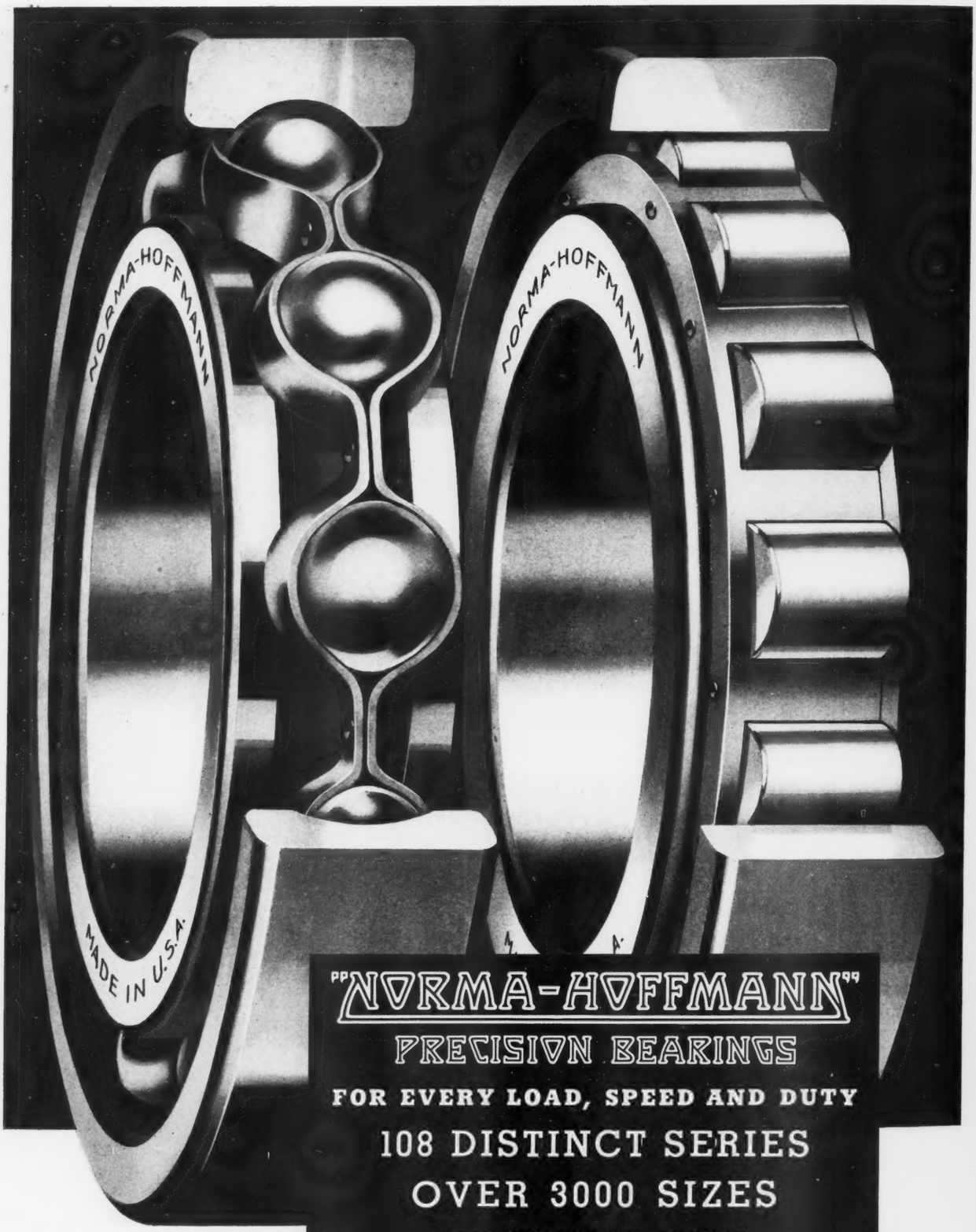
Double Row Self-Aligning Adapter Ball Bearing

Full Type (Retainerless) Cylindrical Roller Bearing

Extra Light Cylindrical Roller Bearing



Two-Lipped Cylindrical Roller Bearing



"NORMA-HOFFMANN"

PRECISION BEARINGS

FOR EVERY LOAD, SPEED AND DUTY

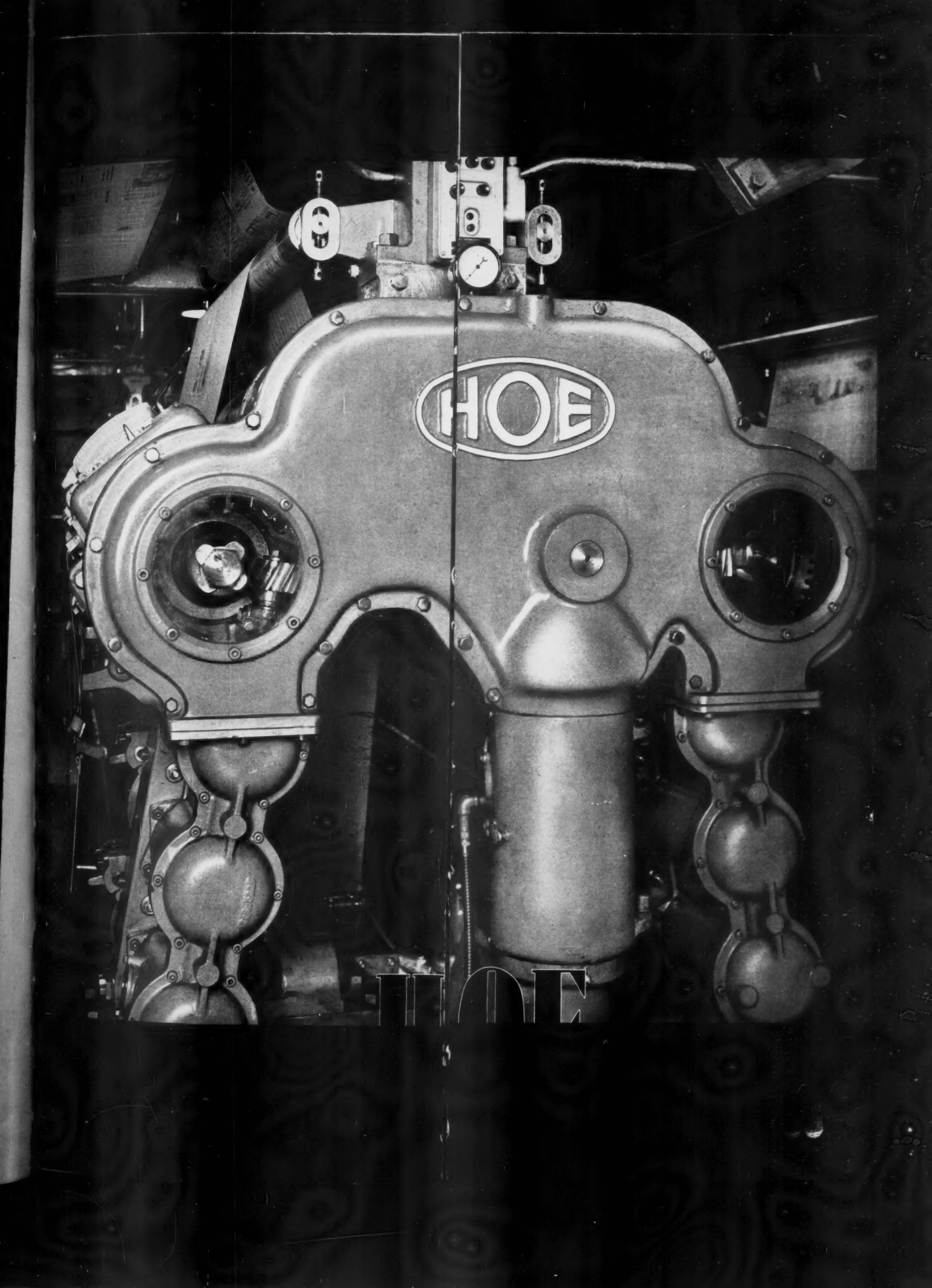
108 DISTINCT SERIES
OVER 3000 SIZES

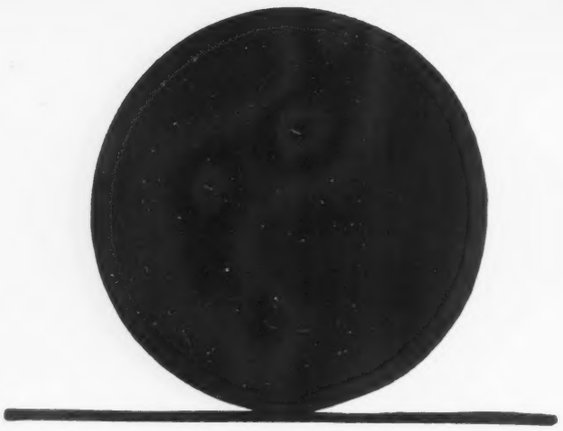
BALL, ROLLER AND THRUST

1/8" to 21" Bore—Metric and Inch Sizes

Write for the Catalog and Engineering Counsel

NORMA-HOFFMANN BEARINGS CORPORATION, STAMFORD, CONN., U.S.A.

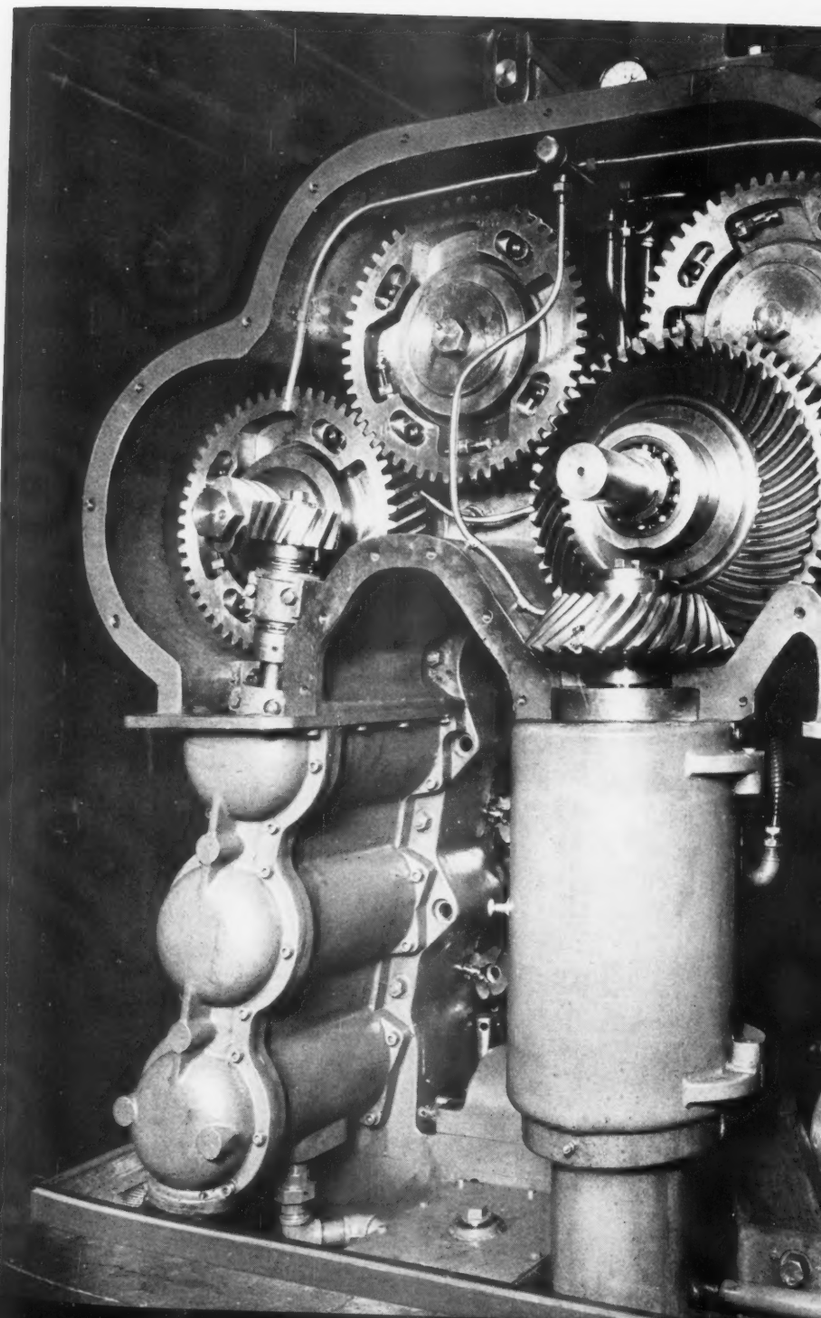

HOE



Designed for...

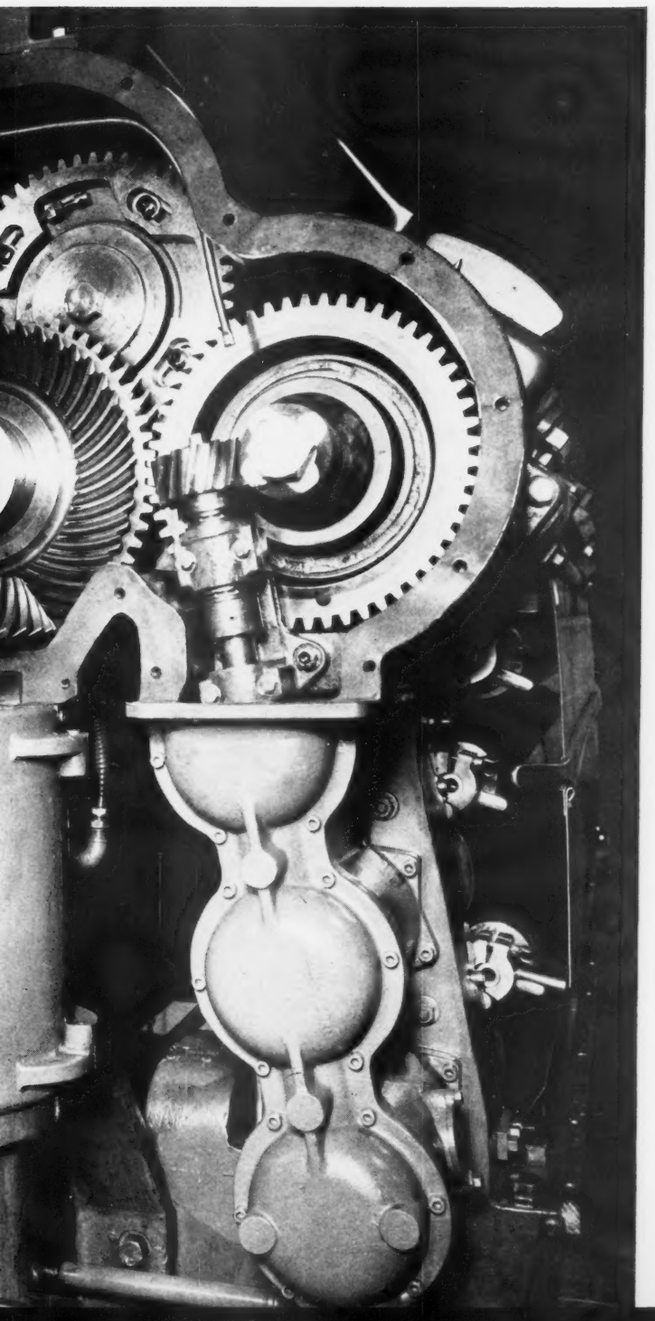
...lower maintenance...op

Removing the guards on the drive side of the Hoe Arched-type Unit reveals the BALANCED drive, all machined to the finest of precision standards. One cylinder in each couple is driven simultaneously from a single, anti-friction-mounted, helical gear which, in turn, is driven by the spiral bevel gear on the upright drive, a feature of Hoe design which eliminates the backlash between printing couples often found in the conventional form of drive. There is no possibility of the torsion which develops when the load is transmitted from one side of the press to the other. Both printing couples start and run in unison; a feature of Hoe design which materially improves first impression printing.



.....higher speed

..operating economy



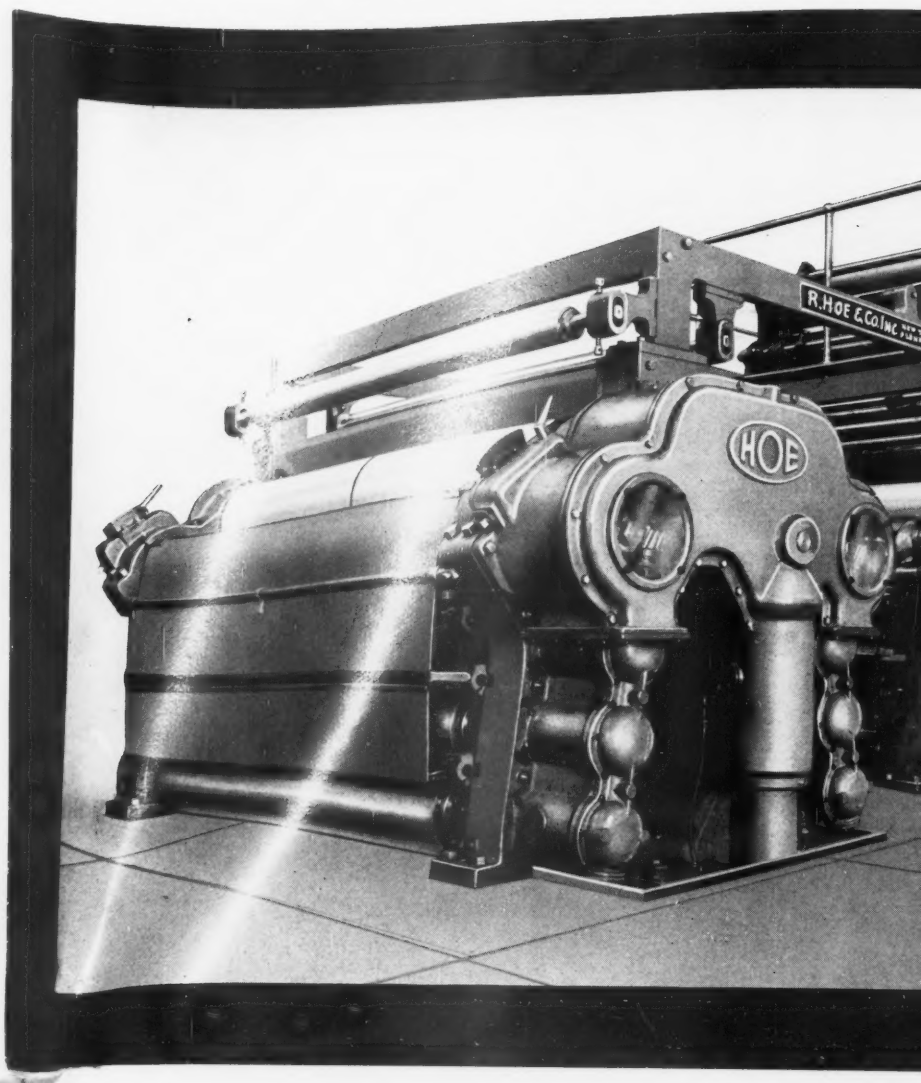
The printing cylinder driving gears of the Hoe Arched-type Unit are all on one side of the press. The entire Unit gearing is fully protected against undue overload by the readily accessible shear pin clutch arrangement shown. The complete driving mechanism is fully lubricated by circulating forced feed oil pump lubricating system. The BALANCED Hoe drive insures smoothest trouble-free operation at highest speeds and represents one of the most outstanding improvements in newspaper press construction made during the last decade in that it permits high-speed operation without lessening printing quality.

10

HOE FEA

that INCREASE PRES

and DECREASE OPE



All eyes are on "costs." Never was economical newspaper production more imperative than it is today. Costs must be lowered. Yet presswork quality must be maintained. But how? Hoe has the answer and will be glad to demonstrate it for any newspaper executive perplexed by this seeming dilemma.

The first requirement obviously is high press speed to provide maximum production. But speed alone is not enough. There must be precision, perfect coordination and great strength within the newspaper press to sustain the high speeds with a minimum of operating interruptions.

Every press shutdown takes its toll of production, reducing materially the net result, the quantity of papers produced per hour . . . which is the ultimate test, the only test of printing press efficiency.

Hoe Equipment meets both requirements in a manner unequalled by any other press equipment. Hoe

Presses at
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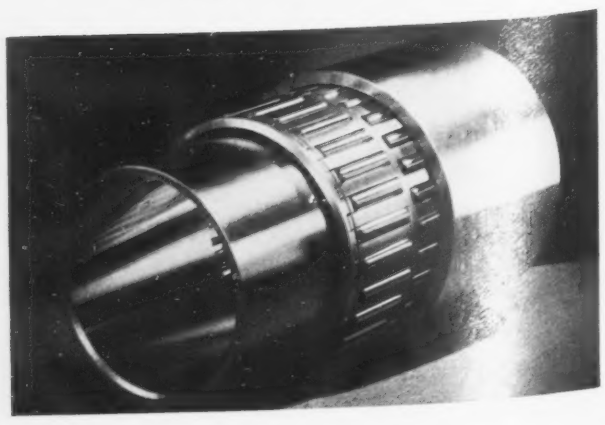
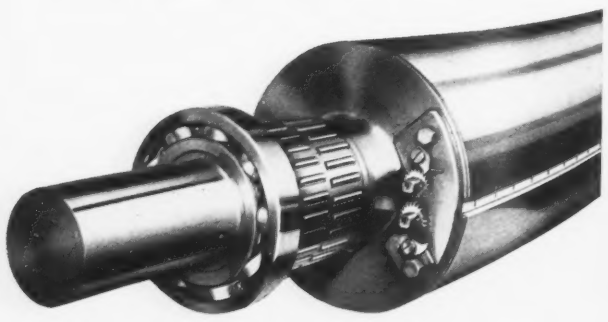
THE *First* ANTI-FRICTION NEWSPAPER PRESS



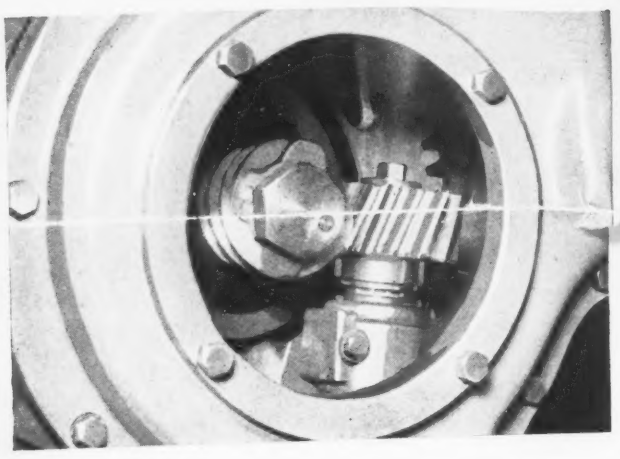
HOE pioneered the first anti-friction newspaper press, building a new concept of the newspaper press, setting new lows for horsepower consumption and press maintenance, new and higher standards of presswork quality.

STAGGERED ROLLER BEARINGS, UNIQUE HOE IMPROVEMENT



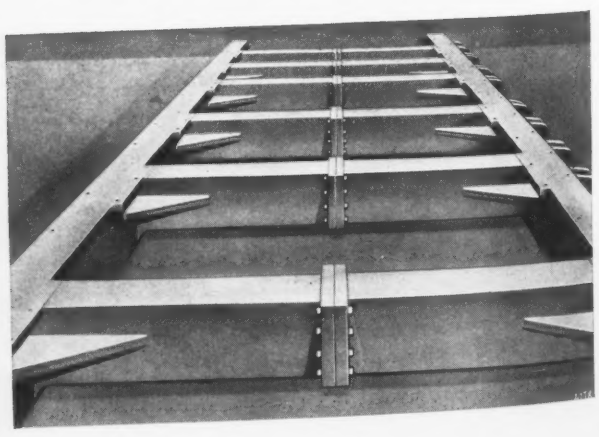
Cylinders are kept rigid, stagger streaks are prevented, and operating horsepower is reduced by HOE patented staggered roller bearings, with ball thrust bearings on each cylinder end.

No Time Lost FOR PRESS LUBRICATION



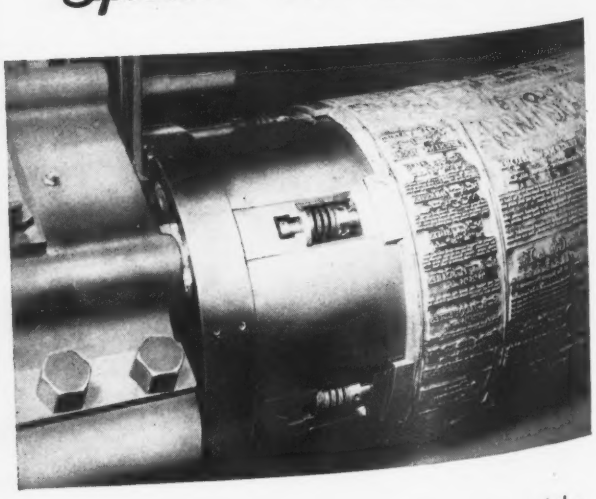
From a reservoir, lubricating oil is pumped automatically within oil-tight housings to all important parts of the units, cylinders, ink motion and driving gears.

A *Rugged* FOUNDATION REDUCES MAINTENANCE

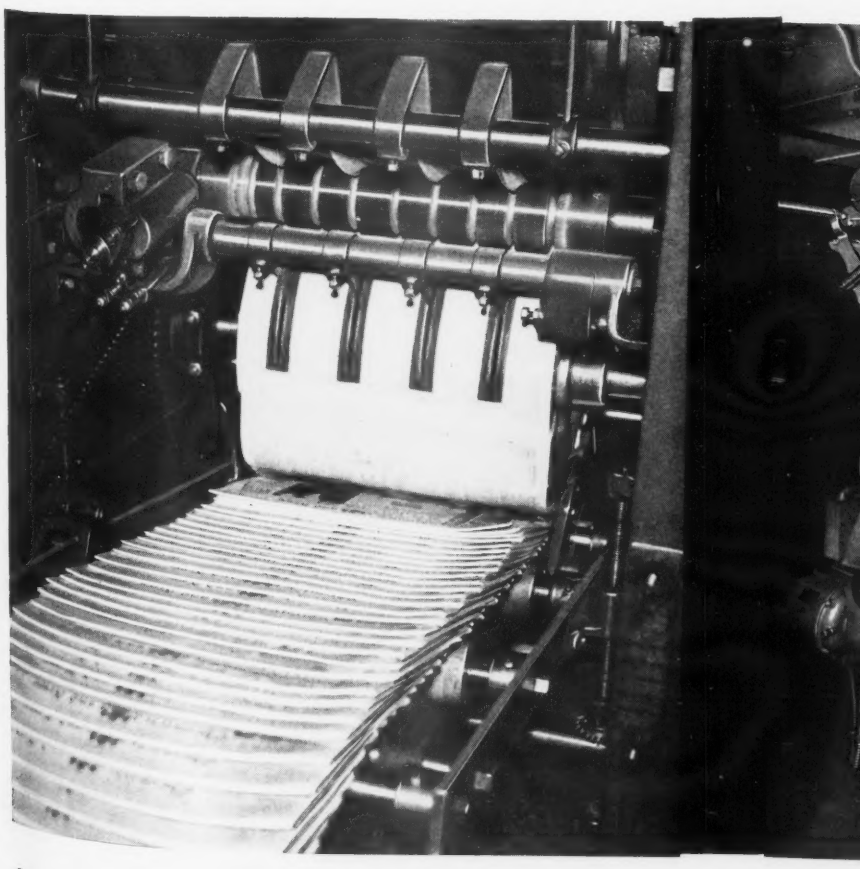


Essentials of sustained high speeds are life-long rigidity, positive alignment of units and folders, and the elimination of vibration; all assured by the rugged, oversize HOE Bedplate.

HOE PLATE LOCK-UP *Speeds* THE GETAWAY



One pull, pressure is applied at three points, and the plates are securely locked; one push, and they are unlocked. The HOE Patented Instantaneous Plate Lock-Up saves valuable time at press time.



For a good lay-down of neatly folded newspapers, the HOE Super-Production Folder. A fitting complement of the modern HOE Press, it is marked by simplicity of design, rugged construction and unusual accessibility. Anti-friction bearings throughout.

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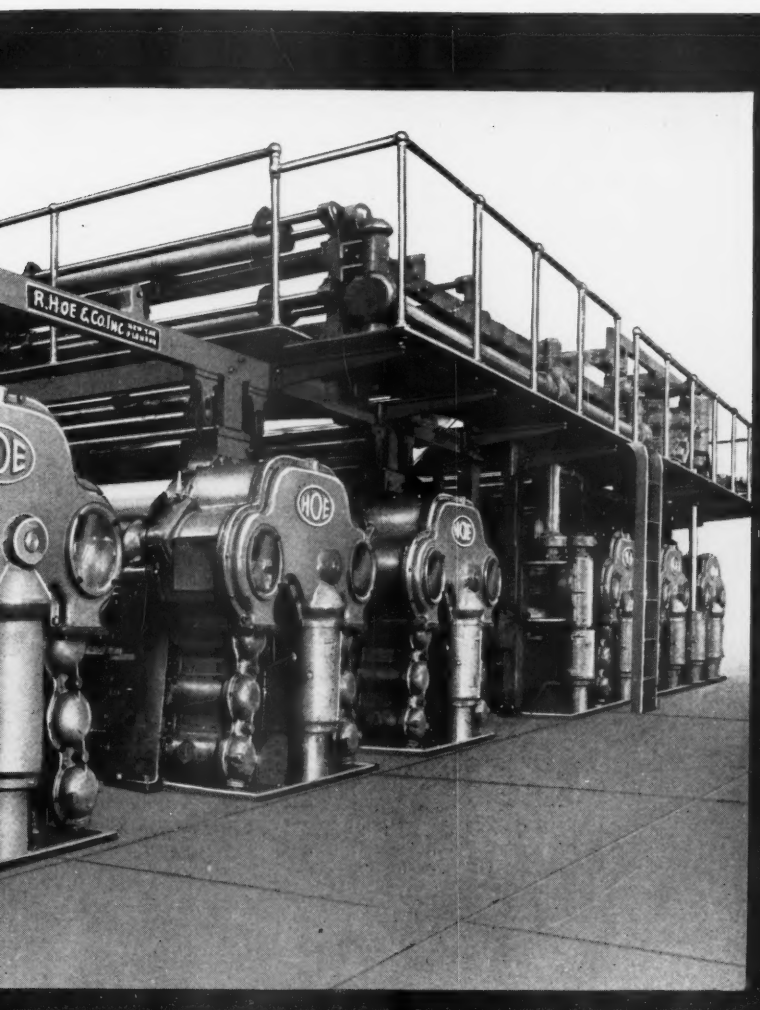
ATURES

RESS PRODUCTION

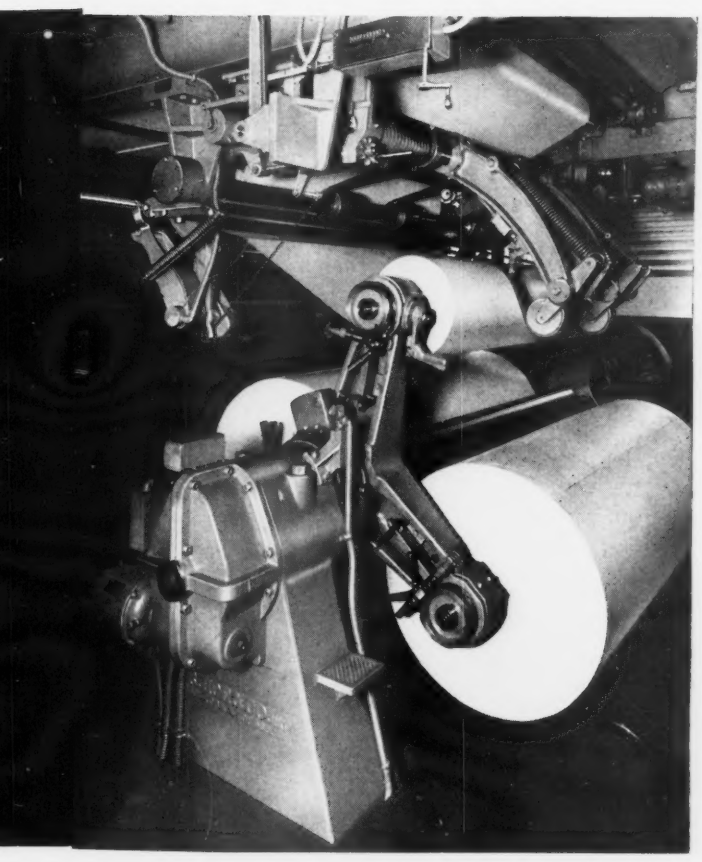
OPERATING COSTS



Presses attain the highest known operating speeds. Besides, Hoe Presses are scrupulously constructed according to the highest standards; materials of construction are selected critically; every modern press improvement is included. The result, the highest possible net production of well-printed papers per hour.

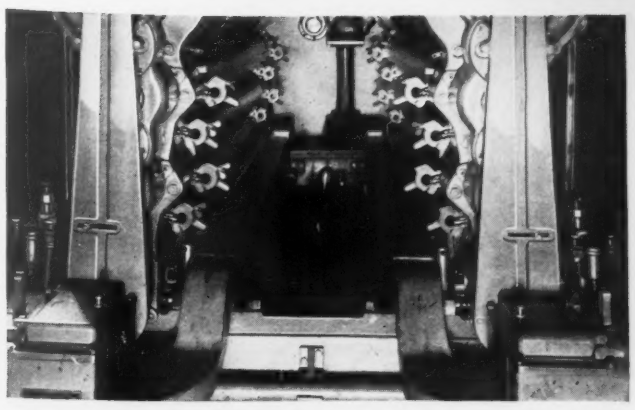
These qualities of Hoe design and construction also reduce maintenance and minimize operating costs. They make Hoe the wisest selection when new presses are needed. But they also demonstrate economies which often make it more economical to retire equipment that is old but serviceable. From whatever angle you view newspaper production, Hoe Equipment increases the output, reduces costs.

If costs are concerning you . . . call in a Hoe representative. He'll show you how to increase press production and lower operating costs. He's at your service. Use him.



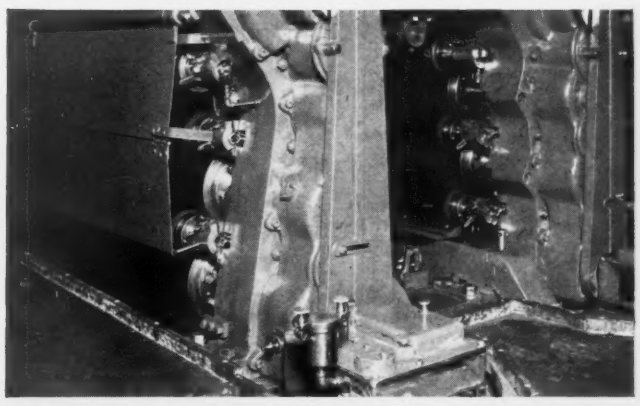
For simplicity, convenience, and high-speed handling of paper roll changes, HOE Reels, Electrically-Controlled Automatic Tensions and Full-Speed Pasters. A convenient handle on the control box sets any tension desired and controls it constantly, absolutely automatically from a full roll right down to the core.

CONTINUOUS, AUTOMATIC *Ink* SUPPLY REDUCES THE INK BILL



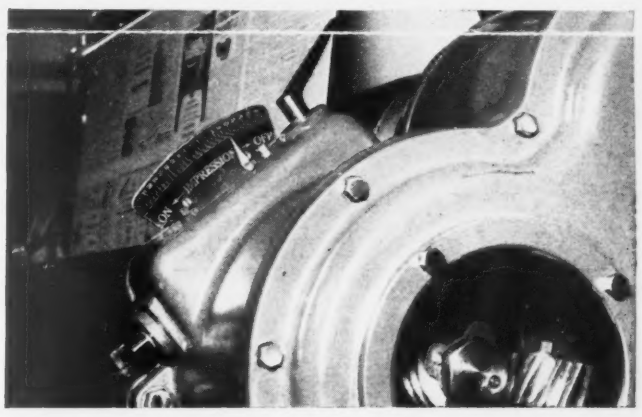
HOE Patented Ink Pumps provide accurate and economical ink feed control. Finger-tip adjustment from outside the press increases or decreases the ink fed to a single column or an entire page.

PROTECTED PARTS FOR OPERATING *Safety*



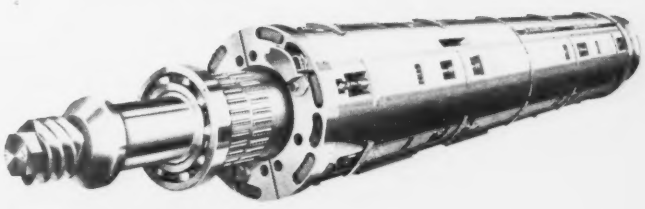
Ample guards assure complete protection of the operators from the revolving plate cylinders and ink motion. A feeding-in pan makes threading the web a faster and a safer job.

Simple, EFFORTLESS IMPRESSION ADJUSTMENT



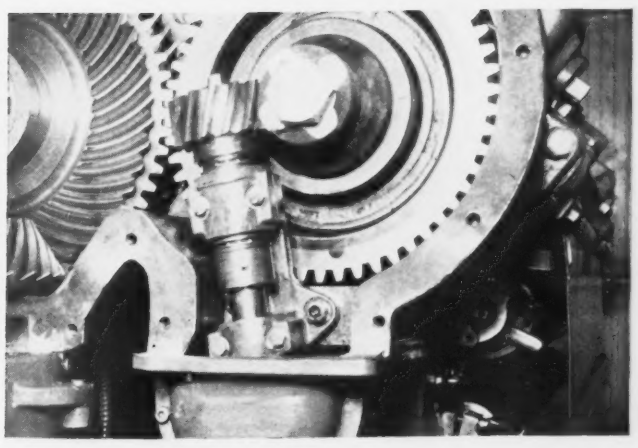
HOE Visual Micrometer Impression Adjustment eliminates guesswork. With the gauges on both sides of the press set to the same impression, cylinders are accurately parallel. Another lift for presswork quality.

PRE-TESTED *Cylinders* STATICALLY, DYNAMICALLY

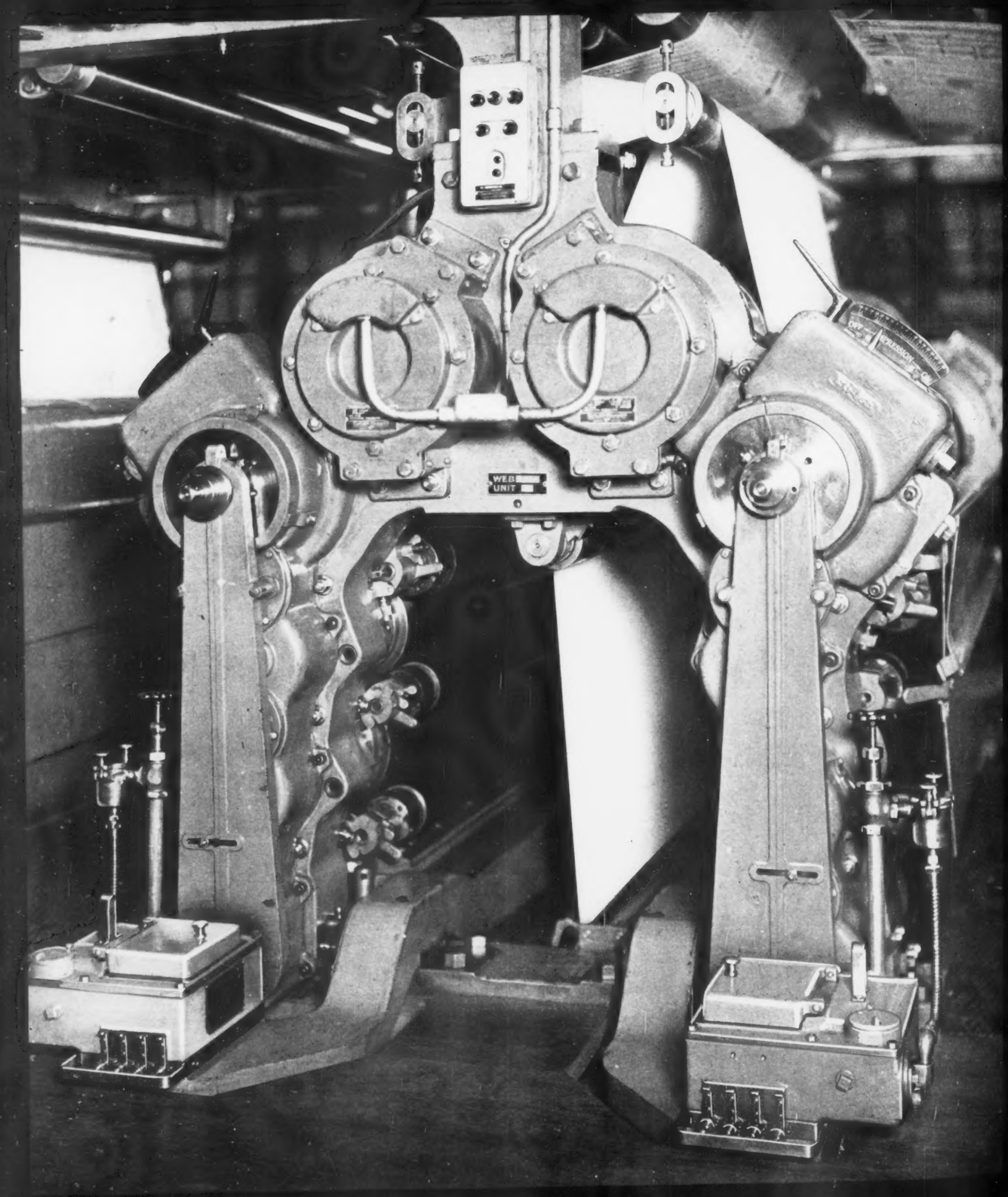


Solid forged steel plate and impression cylinders are heat-treated, ground on their own oversize journals and balanced both dynamically and statically.

INK DRIVE IMPROVES PRESSWORK QUALITY



To improve presswork quality with better ink distribution, HOE employs crank-shaft-type ink-distribution drive. It provides more and smoother vibrations with no idle period of dwell.


WEB
UNIT

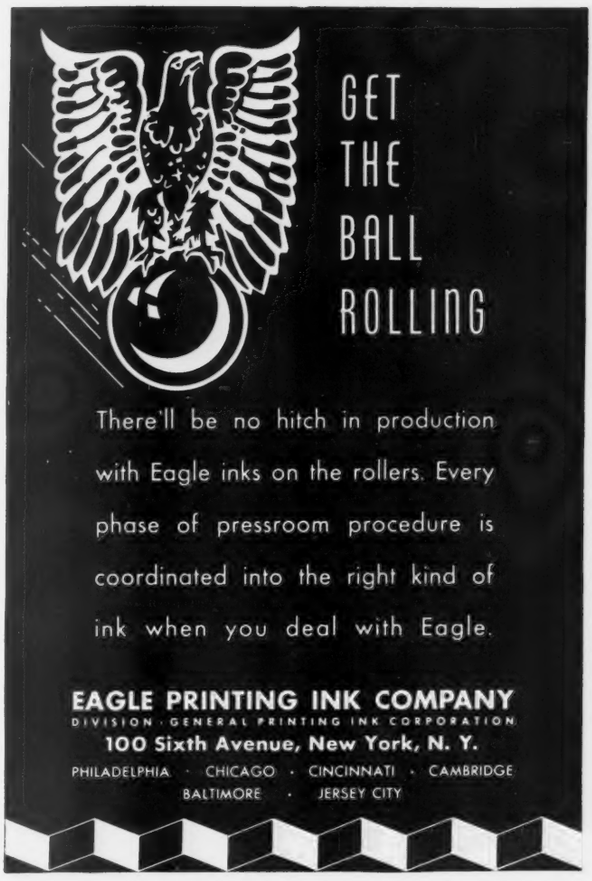
Penny daily 1 1 *banishes*

Dangerous, wasteful all-night gas burning
Need of hiring help to light burners
Needless changing of burner adjustments
Wasted employee time (due to cold metal)
Wasted machine time (because of cold metal)

AUTO-PILOT turns on and ignites gas burners and turns them off at predetermined intervals without disturbing adjustment of burners. Because its function is to *control* the igniting and extinguishing of gas flames, AUTO-PILOT fits all gas-fired melting pots. Saves up to 50% of gas daily.

Eliminate delays and reduce hour costs with AUTO-PILOT. Operates for one penny per day per machine. You begin saving money the day you install AUTO-PILOT. Your name, address brings full technical data from

Hogan Co.
Cedar Rapids, Iowa


GET
THE
BALL
ROLLING
There'll be no hitch in production with Eagle inks on the rollers. Every phase of pressroom procedure is coordinated into the right kind of ink when you deal with Eagle.
EAGLE PRINTING INK COMPANY
DIVISION · GENERAL PRINTING INK CORPORATION
100 Sixth Avenue, New York, N. Y.
PHILADELPHIA · CHICAGO · CINCINNATI · CAMBRIDGE
BALTIMORE · JERSEY CITY

Motors for Scott eight-unit press at Miami (Fla.) Daily News drive through herringbone speed reducers

By **FRANCIS A. WESTBROOK***

*Mechanical Engineer, Benson, Vt.

THE drives for the new Walter Scott eight-unit, high-speed press installed some time ago by the Miami (Fla.) *Daily News* involve interesting details of engineering design which are worth knowing about, even if conditions vary more or less for different installations.

The press is driven by four 100 h.p. motors, 1750 r.p.m. Each motor drives through a herringbone gear speed reducer (Link-belt) having two speeds and which is direct-connected to the motor shaft. Power is transmitted from the reducer to the press by a (Silverstreak) silent chain on 2 ft. 4¾ in. centers. There is no speed change provided for in the chain transmission, the sprockets at each end of the drive each having 44 teeth. These sprockets have cut teeth, are made of chrome nickel steel, are heat treated, and are 6 in. wide. The pitch is ⅝ in.

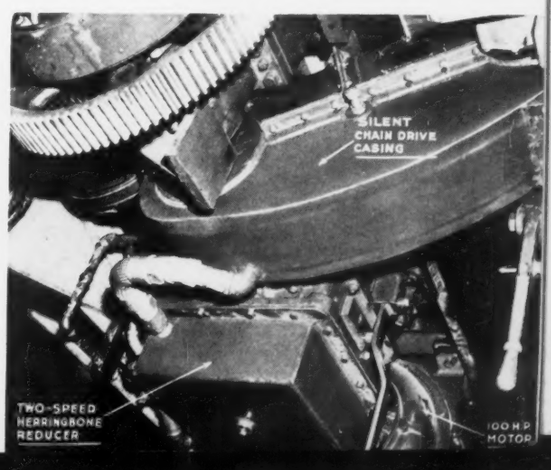
One speed of the reducers cuts down the r.p.m. of the motor to 1680 and the other increases it to 2030. The change is made from one speed to the other by means of a lever on the outside of the box before the press is started. At the higher speed the silent chain operates at 4700 ft. per min., which is more than double the linear speed generally considered reasonable for such drives. The considerations affecting the design of the chains with this end in view briefly, are as follows:

The horse power which can be transmitted by a chain or any other type of power transmission unit such as a belt, etc., is its speed in feet per minute multiplied by its allowable pull in pounds, divided by 33,000 foot pounds per minute. In other words to transmit a given horse power, the speed of the chain can be increased and the chain pull decreased. By doing this, a chain of maximum lightness may be used, thus making for smooth and quiet operation. The increase in chain speed is obtained by increasing the number of sprocket teeth. Consequently, the sprockets have been made with a comparatively large number of teeth, forty-four in this case, which in turn decreases the angle of articulation and results in a corresponding decrease in impact, less wear on the pin bearings of the chain, smoother action and extreme quietness of operation.

Of course, the matter of adequate lubrication for such a drive is very important. It has been provided for the Miami *Daily News* press by having a sump in the speed reducer unit into which the oil from both the reducer and the chain drive casing drains. The lubricant is pumped from this sump through flexible tubing to a strainer and cooling coil and then back to the parts to be lubricated. Experience has shown that this unusual arrangement works out in a very satisfactory manner.

Planning Standards

A new sectional set of planning standards for use in designing printed sales and advertising literature in the industrial 8½ in. by 11 in. size has been issued by Frank M. Knox Company, Inc., New York.



Little Encyclopedia for Ink Problems—II

By STAFF WRITER

Not Printing Sharp (Halo Around Impressions) — When a greasy halo or edge shows around the impressions of the letters and dots, detail of the letter characters is not clearly defined and the print is said not to be clear and sharp. The cause is that the body of the ink is too soft. Standard brands of inks are put out by leading ink makers in three bodies, soft, medium and heavy, suited respectively to paper surfaces such as delicate or inclined to pick, medium and hard. Softness of body should not be confused with shortness. An ink must have a certain degree of shortness to print sharply and its softness must not be too pronounced for the surface on which it is printed. For example, a soft high grade job black may be used on many papers but would show greasy edges on rag content bond. A medium bodied ink, same brand, would look somewhat better than the soft bodied, but only the heavy bodied ink, same brand, would print sharp and clear. The remedy, then, for greasy edges is to add medium or heavy bodied grade of the same ink and if this is not at hand to add an aid to shortness and heavier body such as heavy varnish or wax.

EDITOR'S NOTE — This is the second installment of the series: "Little Encyclopedia for Ink Problems." The first installment of fifteen problems with definitions and remedies appeared some time ago in Printing Equipment Engineer.

Offset (Ten or More Causes) — Whenever offset is directly due to ink, (1) the ink is not suited to the paper, as when trying to print an ink with a body like that of bond ink on coated paper. The ink is frequently blamed for offset when one of a number of causes may be responsible, as follows: (2) room too cold, (3) running too much ink, (4) excessive squeeze causing embossment on reverse of sheet to scratch the wet ink on face of next sheet, (5) inaccurately set delivery causing one sheet to scratch wet ink on next, (6) moving the pile of wet sheets too soon or (7) carelessly moving sheets horizontally in the pile, (8) use of jogger on work inclined to offset, (9) not enough squeeze on solids which absolutely require more than median tones and highlights, and (10) static electricity. Of course, the non-offset spray is a handy preventive of offset and it is especially useful when inks are superposed. Modern inks suited to the paper of themselves seldom cause offset. Up to an ounce of melted paraffin wax to the pound of ink was long used as an offset preventive. Sheet heaters and delivery into a sheet-size box, which causes the sheet to float down on the pile on a cushion of warm air, is a combination first used about 1900 on sheet-size solid plates and a very effective offset preventive still widely used.

Picking — Picking is another difficulty seldom caused by an ink suited to the paper. Bits of the coating are picked from the surface of the sheet if the coating is weakly attached to the body of the paper. There are various causes for weak coating and when the trouble is pronounced, even an extremely soft ink may pick and the coating would not stand the impression of a bare form — without ink on it. Some common causes of picking are: (1) Room too cold, (2) too much ink, (3) ink with too much tack for the paper, (4) ink drying too fast on press increasing the tack and (5) not enough squeeze on solids. More heat, softer ink and more squeeze on solids generally brings relief. A special soft reducing halftone black decreases the tack of the ink while it remains just as black, which is not true if any other reducer is used.

Pickoff — In multi-color and process printing pickoff may occur when the first-down color lacks enough viscosity and the superposed color is of too high viscosity. This also applies in wet printing on two-color presses. The first color printed should be of higher viscosity. Again, when two bumps in gold or aluminum ink are made on a two-color press, the first-down ink should be mixed with varnish of the higher viscosity. If the superposed ink has more tack than the first-down ink, it will pick off the first ink. In wet process printing the four colors are nicely balanced in viscosity and tack so that each successive color will lift cleanly from the preceding ones, *i.e.*, each color decreases in stiffness.

Piling — Of ink on the plate or form is just another term for caking, previously considered.

Rubbing on Dull Coated Paper and Board — Before the advent of non-scratch, non-rub inks this was a vexatious problem but research developed dull inks for dull stock and glossy halftones for enameled stock, both of which dry promptly, non-rub and non-scratch. The dull inks also work nicely and give a pleasing effect on enameled stock.

Smearing — Insofar as the ink is concerned, smearing may be traced to the same cause as ink failing to print sharp: ink is not short and stiff enough. Aside from the ink, smearing is caused most frequently by faulty delivery and careless handling. Of itself, ink seldom causes smearing, provided ink suited to the stock has been used.

Smudging — Smudging in the folder or cutter may be caused by an ink containing too much pigment but this annoyance is becoming rare. The use of non-rub or non-scratch ink does away with smudging even on solids on bleed edges.

Sticking — There are several causes of sheets sticking together in the pile. At times the sheets may be welded together in a solid mass. The ink may be of too high viscosity (too stiff) to penetrate the stock and too much tack would increase the tendency to stick. Again, the upper surface only of the ink film may dry promptly but the underlying surface may dry too slowly and sweat out, causing the upper surface to attach itself to the next sheet. When a second ink is superposed over the first-down ink, if not properly set, the latter may sweat out under the second ink. Because of the nice balance required in process and multicolor inks, it is not advisable for the pressman without experience in ink conditioning to make amendments. It is safer to consult the ink maker.

Trapping — To trap a second ink printed over it an ink should have a certain "tooth", noticeable in inks containing lead colors like first-down process (chrome) yellow and the old favorite cover white, Kremnitz white, recently largely superseded by titanium white. Concerns doing much overprinting should order inks that trap well for first-down colors. Certain pigments have this quality and the ink maker can compound inks that will trap although the principal pigment may lack trapping quality.

Bleeding or Strike-Through — When an ink strikes through it is too thin in vehicle which separates from the pigment carrying some of the color, often just a tinge, with it and appears on the reverse of the sheet. This may occur when the ink is not suited to the paper. An addition of stiff ink or varnish will check the excessive penetration.

It should be understood that printing ink (excepting certain specialties) is a pigment ground in varnish in a mill with both a rubbing and a shearing action. After a number of passes over the mill, two or more, tight or loose, depending on the nature of the pigment, the atoms of the pigment are well dispersed and individually wetted and surrounded by the varnish, but not dissolved in it, as a spirit soluble dye is dissolved in alcohol. The atoms of pigment are in suspension in the varnish, which serves as vehicle to carry the pigment out of the fountain on the steel fountain roll and thence to ductor and the inking system, except in gravure which has no inking system. In the latter process the lower portion of the cylinder rotates in the fountain reservoir

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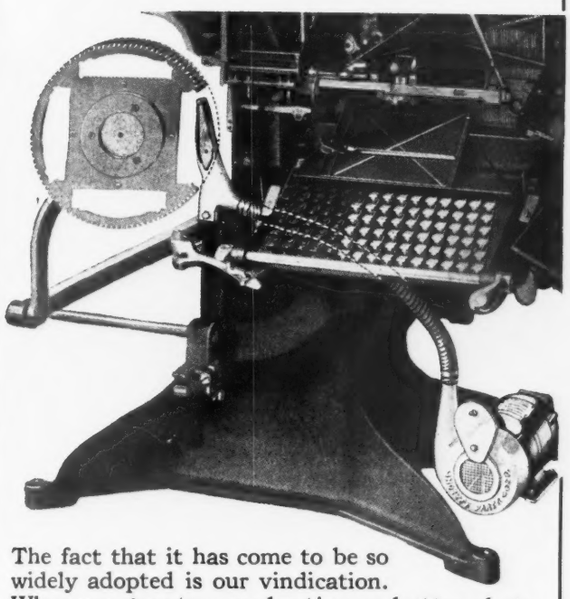

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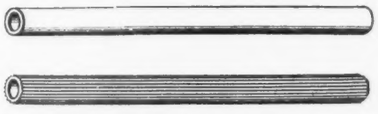

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LIFT Your Heavy Forms SAFELY

NEW HAMILTON ELECTRIC PAGE STORAGE CABINET IS QUICK, SAFE, and EFFICIENT

Just connect the new No. 15221-X Hamilton Electric Page-Storage Cabinet to the nearest convenient electric outlet and it is ready to make handling of your heavy page forms easy and safe.

Turn a lever and the elevating mechanism raises or lowers the shelf to a level with your truck. Then slide form into the cabinet for storage or slide it out of the cabinet for use. You get quick access to 20 pages with this new cabinet and any page can be put in or taken out of the cabinet with perfect safety.

TRY IT YOURSELF!

Go to Booth 39 at the A. N. P. A. Mechanical Conference in Buffalo and try this new cabinet yourself to see how it solves the problem of handling your heavy forms safely.

HAMILTON MANUFACTURING CO.
TWO RIVERS, WISCONSIN

to pick up ink in its cells, any excess being scraped off by the doctor blade.

It is obvious that if the pigment in letterpress printing is to be held in suspension and travel along with the varnish vehicle in the intimate admixture required, the specific gravity or specific weight of the pigment and the consistency or body of the varnish must be in balance and in proper relationship to the paper or other surface. An overwhelming percentage of ink-paper troubles such as bleeding, caking and piling, chalking, drying on the press, drying too slowly on stock, filling, gathering on angle bars, mottle, picking, pickoff, etc., when traced to the basic causes, are found to be due to lack of balance between specific weight of the pigment, consistency of the varnish-vehicle and their relative suitability to the paper, the type of press and actual working conditions. Temperature and humidity (relative) in their uncontrolled variations, affect production definitely.

While the manufacture of paper and ink is held to increasingly closer standards, the quality of uniformity having been proved equally important with quality and price, both paper and ink vary in workability and printability and adaptation to rapid forwarding, finishing and delivery, requirements just as important as workability and printability, with changes in atmospheric conditions. The importance of air conditioning is apparent.

Some average must be the basis for calculation of body of ink to be used in many locations. A temperature of 70 to 75 deg. and relative humidity of 50 to 60 were settled on as the best basic average, since most large printing centers are at sea level or near it, whether close to the great lakes, the sea coasts or in the Mississippi valley.

A considerable deviation affects both paper and ink in workability, printability and facility of forwarding, finishing and delivery. An increase of 10 deg. in temperature radically changes the body of ink, decreasing the viscosity and increasing its penetration, at the same time increasing the absorbency of paper. A considerable drop in temperature will not seriously retard the drying of ink but a considerable increase of humidity will, adding moisture to both ink and paper and decreasing the ink absorbency of paper.

Thus the subject of ink conditioning becomes interesting because of the variations in paper and ink when air conditioning is lacking. As long as these variables remain uncontrolled, the ever recurring problems of suiting the ink not only to paper and press but also to atmospheric conditions, which may change hourly, will remain.

Press Speed Retarded by Ink — It is not uncommon to find complaints that the ink is considerably retarding the speed of the press. This occurs sometimes when an ink is made cheap and heavy to meet or beat a price. The ink should be changed for a better one since the loss in press production is greater by far than the saving in the cost of ink.

Plates and Forms Prematurely Worn — When this trouble can be traced to the ink, as sometimes is true, it is generally due to cheap ink, built to meet or beat a price. Cheap materials and insufficient grinding result in an abrasive ink, which should be changed because the cost of plates and forms outweighs the cost of ink. Few things are independent, most factors in cost as in other considerations must be viewed in relation to other factors.

Recent Improvements — The non-offset spray, judiciously used, has diminished many inking problems, especially when inks are surprinted on others, in which connection sheet heaters are not as effective as in single-color printing.

The water and water-glycerin mist, sprayed on rollers to keep them in condition, definitely aid production. It also makes for cleaner impressions.

ALL MERGENTHALER'S CHILLUN GOT EYES

A Windy Bill Story

By L. H. HOUCK

THE Mighty Alberto, galley boy at the Wildwood *Daily Record*, rushed up to Windy Bill Smith's bench, panting like a lion. He waved a pale blue envelope addressed in a woman's hand under his nose. He pitched the missive on the bench in front of Windy.

"Wiolets—smells like wiolets," he shouted, as he dodged an imaginary clout on the ear and rushed back to his beloved galleys.

Windy peered at the letter through his glasses. As nothing happened, he looked at it over his glasses. Again nothing happened, so he reached over for the big tin snips, picked up the letter and clipped off the end. When the delicately scented message dropped out, Windy Bill picked it up and read this:

Dear Mr. Windy Bill:

I've been informed you can tell me what is the trouble with my typesetting machine. I am a young lady operator, said to be fairly good-looking and I just love to run this machine but now it's giving me the creeps. It seems like eyes are watching me all the time, but I'm having the most trouble with the distributor. There seems to be a mild revolution, or lack of revolution up there among the roly poly rods and the cute little matsi-watsies.

I am truly a lady in distress, Mr. Windy Bill, do please write me a letter and explain how the distributor works and everything that can be wrong with it. If you'll do this, everything will be just dandy in the office of the Three Lakes Express, *where Daisy Maisie Tubbs has got herself into an awful lot of trouble with this mean old machine.*

DAISY TUBBS.

"Ain't that just dandy," Windy Bill muttered to himself as he grabbed up a greasy pencil stub and a handful of proof paper. "Just dandy wandy." He gritted his teeth, wet the pencil on his tongue and started writing.

"Dear Miss Daisy Waisie:

"After a careful checkup I am happy to inform you there are only 3110 reasons why a distributor stops. In almost no time at all I can give you at least 3000 reasons for stops accompanied by lucid explanations.

"To begin, you may have noticed the little matsi-watsies are transported from the distributor box to the north, south, east or west, depending on which direction your machine faces. Their leisurely treke along the combination bar is encouraged by a bunch of twisted iron bars, called distributor screws.

"Now it's a funny thing about these distributor screws. They have an agreement to cooperate with one another. But on your particular machine the bottom screw on the front, or if you're standing on the back step, it'll be the bottom screw. This screw is an unreconstructed rebel. He would not sign. Having been around some he was not to be easily taken in by any restrain of trade agreement. So this screw said to the other screws:

" 'I will cooperate, and by cooperate I mean remain in time, or in step, with the rest of the screws just as long as everything is kept straight and as long as the matrixes cooperate by not lagging or dilly-dallying. Whenever a mat hangs back I will throw the whole shebang into a distributor stop.'

"A fundamental cause for distributor stops may be lack of power. Since you can't always tell if the power is turned on by looking at the switch, I always snap the switch two or three times in all directions, to make sure. If you are still unable to tell if the power is on, then look at the distributor. Of course, if the distributor has also stopped, you will have to check some other part of the machine. *It is important to discover as early as possible whether or not the power has been turned on.*

"Once you have determined the power is on, assuming the light bill for current has been paid and you are again in good standing with the local dispenser of kilowatt hours, then it is time to start checking why the distributor stopped.

"About half way between where you usually park your little tootsies and the top of the machine, is a shaft cluttered up with pulleys and belts. This is called the intermediate shaft, which I have dubbed the 'Middle Liar.' See your dictionary where it says 'Intermediate—lying in the middle.' On the end of the Middle Liar you will find what is com-

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WOOD DRY MATS

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★ Solid Blacks
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it's the MAT that has EVERYTHING!

Every craftsman who takes pride in clean-cut printing, rich solids, delicately graded tonal values, blazing highlights... will appreciate the performance of Wood Dry Mats. Made by men who know the problems of stereotypers and pressmen, Wood Mats lead in popularity and perfection.

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Always Uniform

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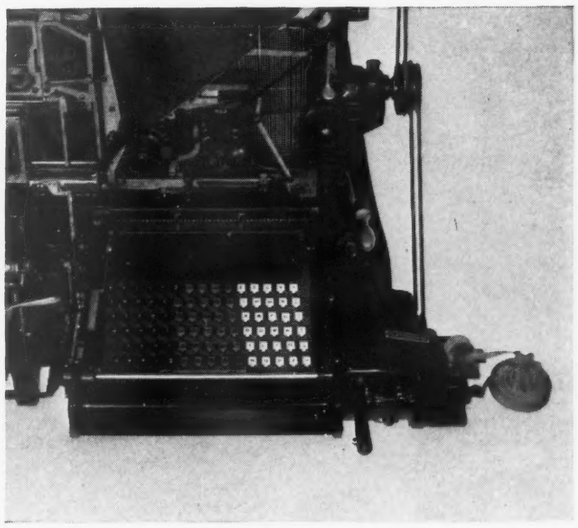


Operating Unit on composing machine. Simply insert tape, turn switch and there is type.

NON-STOP COMPOSITION...

Means More Type In Less Time!

It's interesting to watch a composing machine with the Teletypesetter operating-unit attached as it turns out slugs in about half the time it takes by hand. On the composing machine the Teletypesetter secures its greater output by plugging along, hour after hour, continuously and without a stop. Owners are amazed at the few delays encountered for distributor stops, mats jamming, etc. This is one reason why Teletypesetter gives you more type in less time. Another reason is that the fast touch system keyboard supplies the operating unit with tape at approximately double that of manual operation. If we had the room we could tell you a lot more, but suppose you—

Send for your book

In this bulletin are the complete details on both the Teletypesetter keyboard-perforator and the operating-unit. When you have read it through you will know why Teletypesetter gives you more type in less time.

TELETYPESETTER CORPORATION
1400 Wrightwood Ave. Chicago, Ill.

TELETYPESETTER
REG. U. S. PAT. OFFICE

monly called a pulley. A round belt is supposed to extend from this pulley to a similar pulley at the distributor.

"Check this closely. After you have mastered the previous paragraph you will know the location of two pulleys. The next point is that the belt between these two pulleys drives the distributor. If the Liar or intermediate shaft is turning and the distributor is not—check this belt. If it is off or gone, you must locate it before proceeding further.

"When properly hooked up this belt will be endless and have no ends. Unless you fasten the two ends which we should not have, using the conventional bright little hook which looks like a cross between a safety pin and a paper clip, then the power flow will lack stability.

"Now that this belt is in proper though loving embrace with the upper pulley and the lower pulley, the distributor screws will turn again in the town of Three Lakes.

"If you've completed this, you now have the screws running backwards. As you may have suspected there is a twist to it. Now take the top strand of the belt and place it where the bottom strand is and take the bottom strand and put it where the top strand was. When this operation has been mastered you will have the screws turning in the right direction.

"This completes the second reason why distributors stop. There remains only the trifling number of 3108 more reasons.

"You may have noticed at the back of the distributor a contrivance on so-called hinges, containing a multiplicity of partitions in lateral alignment superimposed upon a brass arch, and separated from one another at either regular or irregular intervals by generous slices of air. In the vernacular of what I like to call the printing crafts, this is called the distributor gate.

"This contrivance is appropriately named. Like all respectable gates it has two normal positions. One is 'Open' and the other is 'Closed'. Any intermediate position should be discouraged.

"Having located the gate look at it closely. Now get ready to *think hard.* Notice that when the gate is open the distributor stops—and when you close it the distributor starts sometimes.

"You may wonder how the distributor knows when the gate is open or closed. Well I'll tell you. Go around in front of the machine and beginning with the lowercase 'e' count down five and press the key. The *i's* of the machine are upon you. These eyes are always upon you which accounts for the creepy feelings you have. All Mergenthaler's chillun has got eyes.

"We are now down to reason 3107. It's time you were learning to do for yourself. However, it will never be said that Old Windy Bill ever let a lady down in distress, so I will now give you the master key or the supreme remedy for distributor stops.

"Get an assortment of large wrenches and one large hammer. With these tools remove the distributor beam from the machine, put it on your shoulder and head for the nearest Federal highway. There you can stand at the side of the road as though you wanted to hitch a ride.

"Before long some nice machinist will come along in a big car on his way to Florida to spend the winter and he will pick you up. When he sees the distributor on your shoulder, and being a slug-casting machine machinist, he will be sure to ask questions.

"When he does, just play dumb and let him fix it for you.

"WINDY BILL"

Adopts Direct Pressure

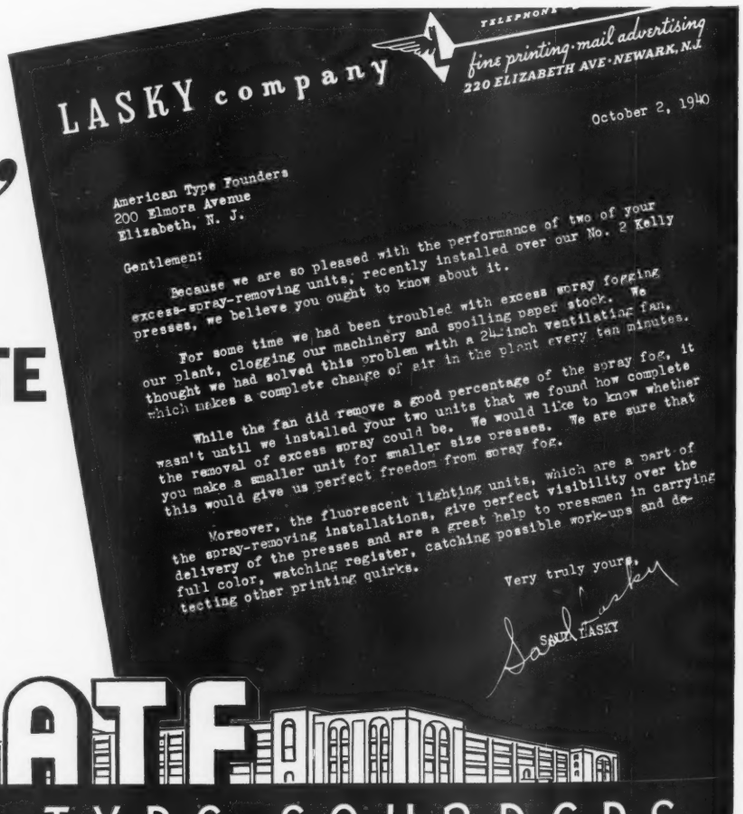
The New Orleans *Times-Picayune* Publishing Company has installed a streamlined Lake Erie Directomat direct pressure mat molding press in its stereotype department. The press will be used for black and white and for color molding by the morning *Times-Picayune* and the *Evening States*. The Directomat is of 800 T. capacity and is equipped for operation from either side. Reportedly, mats are being molded in 15 sec. Pressure is adjustable for open and solid forms.

Huber's Boston Office

J. M. Huber, Inc. has announced that its Boston office is located in Rooms 320-321, Chamber of Commerce Building, at 80 Federal St., Boston, Mass.

Printers "OK" ATF FILT-AIR-LITE

Men work better... machinery functions better... in a clean, wholesome atmosphere... *in a pressroom free from dust and other flying particles.* That's why the new ATF Filt-Air-Lite is receiving the enthusiastic endorsement of more printers every day. It does the job, efficiently and at low cost. Ask to see it at your nearest ATF Branch Office, or send for complete details.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220 ELIZABETH AVE · NEWARK, N.J.

October 2, 1940

American Type Founders
200 Elmora Avenue
Elizabeth, N. J.

Gentlemen:

Because we are so pleased with the performance of two of your excess-spray-removing units, recently installed over our No. 2 Kelly presses, we believe you ought to know about it.

For some time we had been troubled with excess spray fogging our plant, clogging our machinery and spoiling paper stock. We thought we had solved this problem with a 24-inch ventilating fan, which makes a complete change of air in the plant every ten minutes.

While the fan did remove a good percentage of the spray fog, it wasn't until we installed your two units that we found how complete the removal of excess spray could be. We would like to know whether you make a smaller unit for smaller size presses. We are sure that this would give us perfect freedom from spray fog.

Moreover, the fluorescent lighting units, which are a part of the spray-removing installations, give perfect visibility over the delivery of the presses and are a great help to pressmen in carrying full color, watching register, catching possible work-ups and detecting other printing quirks.

Very truly yours,

Sam'l Lasky

SAM'L LASKY

ATF

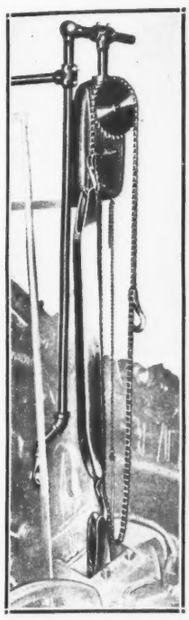
AMERICAN TYPE FOUNDERS

200 ELMORA AVENUE, ELIZABETH, NEW JERSEY • *Branches and Agents in Twenty-three Principal Cities*

Types used: Franklin Gothics, Grayda and Bodonis

The Jordan continuous type-metal Feeder

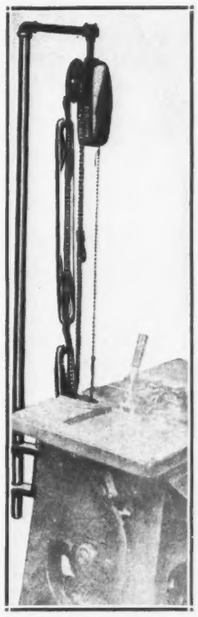
for the LINOTYPE, INTERTYPE, LUDLOW, ELROD, MONOTYPE and the MONOTYPE MATERIAL MAKER



The first thing you notice on the Jordan Feeder is the endless chain that is carried around by the sprocket. And the first thing you realize is that you don't have to pull back and adjust the chain every time you put on an ingot as you must do with the old-style feeder.

The next thing you notice is the way the ingots hang from the hooks. They do not overlap. They are so spaced that they can not jam in the metal-pot as does happen at times with the old-fashioned feeders, where the pigs overlap.

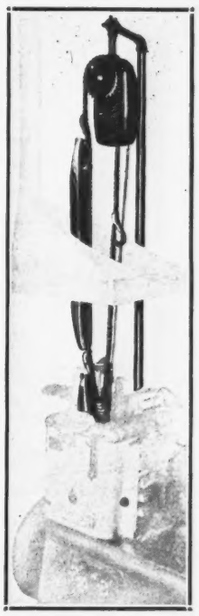
Because of the steady, endless chain on the Jordan Feeder, the ingot is attached quickly and safely to the hook.



Another exclusive feature of the Jordan Feeder is the precision of its operation — a precision that assures an unvarying action enabling it to feed just as fast or as slow as the metal level in the pot requires. By this precision, the metal is also held to a constant temperature.

One ingot is always feeding. This eliminates the necessity of exact timing for attaching the next ingot — a feature which every operator and machinist will appreciate.

The Jordan Feeder operates efficiently with any kind of hanging ingot but is doubly efficient with the Double-ear Slip-off ingot that drops from the hook automatically when it has melted down to the ear.



Tell us the type of machine on which you want to install continuous feeding and we will ship you a Jordan Feeder with proper support, ready to be attached in a few minutes, by your operator. $75—including support.

United American Metals Corporation 200 Diamond St., Brooklyn, N.Y., 2246 W. Hubbard St., Chicago, Ill. 4101 Curtis Ave., Baltimore, Md., 785 Bryant St., San Francisco, Cal.

Seniors on Inspection Tour

The senior class of the Department of Printing, Carnegie Institute of Technology, Pittsburgh, Pa., made an inspection tour of several printing plants in Chicago during the week of May 5-10. Plants visited included Chicago Rotoprint Company, W. F. Hall Company, Cuneo Press, Ludlow Typograph Company, United Autographic Register Company, the Lakeside Press, and Rand-McNally Company. On the trip visits were also made to Crowell-Collier Publishing Company, Springfield, Ohio; Champion Paper Company, Hamilton, Ohio; and Rapid Electrotype Company, Cincinnati. Carnegie Department of Printing Alumni located in the Chicago district arranged a dinner meeting for the students making the trip, and the Miehle Printing Press and Manufacturing Company entertained the group at a luncheon. The tour was made under the direction of Glen U. Cleeton, head of the Department of Printing.

Buys Western Adhesives

Murray Stempel, Vice President and General Manager of Paisley Products, Inc., Chicago, announced recently the purchase of equipment, formulas and manufacturing processes of Western Adhesives Company. Manufacturing will be transferred to the Paisley plant, which is now undergoing extensive alterations and expansion of storage, laboratory and manufacturing facilities. Herman Liberman will continue to contact the printing, paper box, and allied trades field for Paisley. Paisley Products, Inc. is a subsidiary of Morningstar, Nicol, Inc., New York, N. Y.

The editor invites you to pass on to other executives any mechanical or production improvement developed in your plant. They'll appreciate hearing about it.

EFFECTIVE

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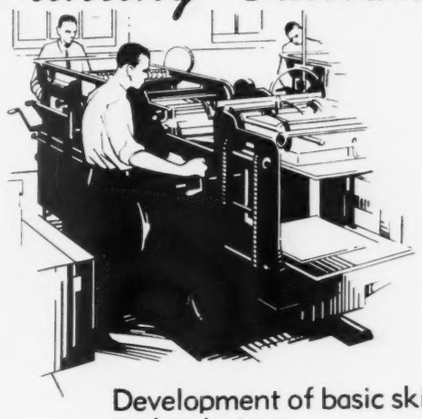

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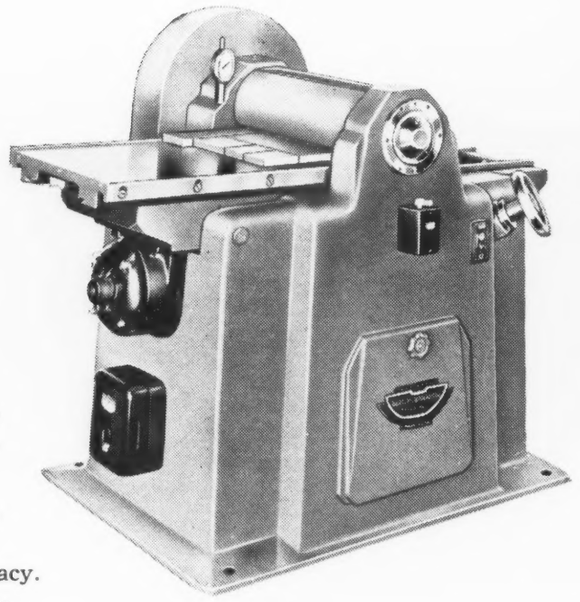

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The Printing Metals Situation

THE following metals used individually or as alloys in the printing industry are of daily concern to the OPM (Office of Production Management). In their production, some of these metals are running far behind demand and as a result warrant the attention of printing plant users in connection with their own needs. As we go to press the situation is as follows:

ALUMINUM: One of the critical metals bulking large in defense needs. Demand still far ahead of production. This metal on full priority list, that is, every pound of it is being rationed. No immediate relief in sight.

ANTIMONY: While the War Department classes it as a strategic metal, its use in defense materials is relatively small. At present orders in U. S. for antimony are being filled promptly. Mexico is our chief source of antimony—the ore being smelted at Laredo, Texas.

COPPER: Position very tight, but producers are cooperating nicely. OPM watching this important metal very closely. U. S. production insufficient to meet our needs. Heavy importations from Latin America. Be prepared for slow deliveries.

LEAD: Ample production capacity thus far. Production, however, is spoken for so far in advance that sales must be limited to available supply. No restrictions contemplated at present.

NICKEL: Exceedingly tight: OPM announces plan which provides mandatory industry-wide control over all supplies of nickel. Sales for non-defense uses restricted. Over-all shortage of nickel for all uses is increasing, hence the rationing of this metal.

TIN: Situation still comfortable. Orders being filled promptly. As long as boats bearing tin cargoes from the Far East and England are not sunk, OPM is not disposed to impose restrictions on this metal.

ZINC: Another extremely critical metal in huge demand. Biggest use as an alloy with copper to make brass. We are committed to supply England from our stock pile. Engravers should keep watchful eye on their waste. Government has set a ceiling of 6½c lb. on engravers scrap zinc. Top quotation by dealers not over 6c lb.

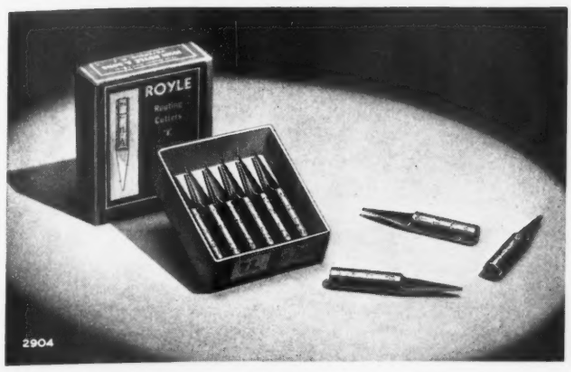
NONFERROUS METALS SMELTER QUOTATIONS
(100 lb. Lots)

	Apr. 30	*May 24*
Aluminum (94% + c. l. deld.)	$15.50	$15.50
Antimony (bulk American)	14.00	14.00
Copper (refinery nominal)	11.875	11.875
Lead (E. St. Louis pig)	5.70	5.70
Nickel (99% electrolytic cathodes)	35.00	35.00
Tin (Straits spot pig)	52.00	52.25
Zinc (high grade slab)	8.25	8.25

These quotations furnished by *Daily Metal Trade*, Cleveland.

Mechanical Executives —

Our readers will be glad to know about what you have done to aid production. Pass it along in *Printing Equipment Engineer*.



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H		Copper (Ground below center)
L		Zinc (Long blade)
M		Wood veining (No taper)

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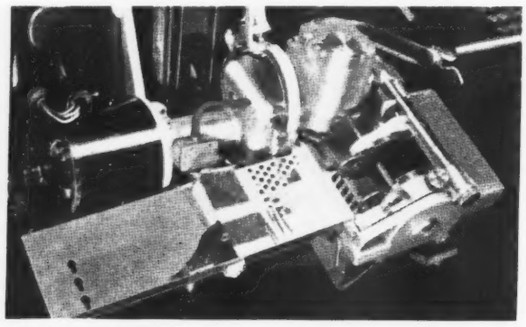

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PRINTING PATENTS REPORT

Covering Patents Issued April 29, May 6, May 13, May 20

This data is compiled exclusively for *Printing Equipment Engineer* by Invention, Inc., is verified in the United States Patent Office, and is comprehensive of all patents in the field of each heading continuous from the last published issue of this magazine. For copies of patents listed here, specify the patent numbers and send 10c each (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating:

2,242,185. BINDER of the type comprising a comb-shaped structure formed from a thermoplastic material, characterized by having the teeth when in final curved form constitute an arc greater than 360°, so overlapping. Invented by Isidore Spinner, Chicago, Ill. Assigned to Plastic Binding Corp., Chicago, Ill. Application November 29, 1938. 5 claims.

2,242,696. SPIRAL BINDER, particularly for loose leaf books and the like, characterized by a novel arrangement for attaching the spiral binding element, which is preferably of wire, to the backing of the book, etc. Invented by Sumner W. Dow, Boston, Mass. Unassigned. Application December 11, 1949. 4 claims.

Composing Room Equipment:

2,239,791. LINE GUIDE for use by Linotype operators, etc., of the type having parallel, spaced-apart line rules which may be adjusted with respect to each other. Invented by Julius Lemperle, Salt Lake City, Utah. Unassigned. Application September 23, 1940. 3 claims.

2,240,956. LINOTYPE MATRIX CHANGING DEVICE comprising a spiral chute, an orifice in this chute for receiving matrices from the star wheel of the matrix delivery belt, a matrix storage receptacle, and a matrix transfer box disposed intermediate the chute and receptacle for receiving matrices from the chute and loading them into the receptacle, the receptacle releasably engaging the matrix transfer box for ready removal. Invented by James E. Morgan, Portland, Oregon. Unassigned. Application December 27, 1937. 8 claims.

2,241,597. MAKE-UP GAGE for squaring, sizing and justifying type-page forms under lock-up pressure prior to assembly of the form for transmission to the printing press. Invented by Horace W. Hacker, La Grange, Ill. Unassigned. Application July 20, 1940. 13 claims.

2,242,018. AUXILIARY METAL FEEDER FOR TYPE CASTING MACHINES of the Intertype or Linotype class. The device is removably pivoted to the frame of the type casting machine, so as to be swung into or out of operative position independently of the relative reciprocable metal pot and crucible. Invented by Archie Buchanan Reid, Park Ridge, Ill. Unassigned. Application October 17, 1940. 5 claims.

2,242,178. TYPOGRAPHICAL SLUG CASTING MACHINE including a slotted mold consisting of cap and body elements movable relative to each other to open and close the mold slots, and separate, distinct elements for opening, closing and locking the movable elements of the mold. Invented by Herman R. Freund, Brooklyn, N. Y. Assigned to Intertype Corp., Brooklyn, N. Y. Application September 12, 1940. 12 claims.

Feeding, Folding, Delivery:

2,240,257. FEED ROLLER DRIVE including an electrical coupling adapted, by continuous slippage, to impose on the roller an accelerative web-tension torque insufficient to cause slip between the roller and the web. Invented by William Gibson, Sideup, England Assigned to A. Reyrolle & Co., Ltd., Hebburn-on-Tyne, England. Application November 25, 1938. 4 claims.

2,240,423. SHEET FEEDING CONTROL, characterized by maintaining the "indirect" elements of the feeder, such as the pile transport, the rhythm rollers, etc., in motion even on interruption of the feeding action. The invention thus eliminates jolting or jerking heretofore prevalent upon starting of the feeder after an interruption. Invented by George Spiess, Leipzig, Germany. Unassigned. Application December 3, 1938. 12 claims.

2,240,424. SHEET FEEDER comprising the combination including a sheet forwarding machine, a sheet working apparatus associated therewith, a registering guide arranged with the forwarding device for correctly registering a sheet being fed, and novel arrangement for turning the rear corner of the registering edge of the sheet so as to cause the rear corner to engage the registering device first. Invented by George Spiess, Leipzig, Germany. Unassigned. Application May 17, 1939. 4 claims

2,240,818. SHEET FEEDER comprising a sheet stack support, vertically movable suction-means for successively lifting the sheets vertically from the stack, and intermittent means for advancing the sheets horizontally beyond the suction-means and characterized by comprising a part which moves vertically with the suction device. Invented by Bruce Wale, Berkeley, Calif. Unassigned. Application August 2, 1939. 20 claims.

2,241,474. SHEET FEEDER for separating blanks from a stack of sheet material, particularly for use with envelope making machines. Invented by Abraham Novick, Flushing, N. Y. Assigned to F. L. Smithe Machine Co., Inc., New York, N. Y. Application April 5, 1940. 12 claims.

Miscellaneous:

2,240,999. METHOD OF TREATING PRINTED PAGES TO LIMIT THE PERIOD OF THEIR LEGIBILITY comprising applying an actinic solution of predetermined strength to one or more of the printed areas of one or more previously printed pages of the book, this solution having the characteristic of turning dark when exposed to light and at a speed approximately determined by the strength of the solution, whereby each coated area will, when exposed to light, provide a dark non-contrasting background for the printed matter within the coated area, and controlling the depth of color to be obtained at the coated areas by the quantity of solution applied thereto.

2,240,486. INK REPELLANT COMPOSITION for offset or lithographic plates, characterized by containing an ester of an aliphatic sulphodicarboxylic acid. The composition is said to be useful with plates having electrodeposited metal coatings instead of the usual grained or etched coating. Invented by Charles O. Beckley, Chicago, Ill. Assigned to Western Electric Co., Inc., New York, N. Y. Application May 1, 1940. 9 claims.

(*Continued on Next Page*)

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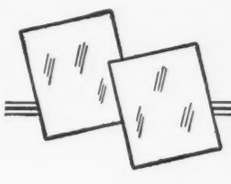


ZOMO ELECTRIC ZINC
A-Z ELECTRIC ALLOY

2,240,945. ARTISTS' DRAWING SHEET for photographic reproduction, produced by covering an area of this sheet with a substance invisible to the eye and to the camera and capable of being developed to visibility, superimposing on portions of this area a protective coating leaving other portion of this area uncoated to form an invisible design there and capable of being developed to visibility, applying to this sheet a developer adapted to develop to visibility this uncoated portion of this area, this developer having the property of dissolving and permeating this protective coating adjacent this uncoated portions, and varying the extent of this portions of this area developed to visibility by varying the time of application of this developer to permit more or less permeation of this protective coating adjacent this uncoated portions. Invented by William Swaysland, Cleveland, Ohio. Unassigned. Application March 16, 1938. 14 claims.

2,242,295. PROCESS FOR PRINTING ON CLOTH, employing both press and screen printing, comprising the steps of (1) applying the cloth to a relatively stiff backing member carrying an initial dye impression; (2) making subsequent dye impressions on the cloth so that the cloth adheres to the backing and receives an imprint therefrom; (3) press printing additional colors on the cloth as it adheres to the backing, and (4) screen printing on the cloth to cover certain areas uniformly. Invented by Robert F. Foard, Los Angeles, Calif. Unassigned. Application January 20, 1939. 3 claims.

2,241,380. METHOD FOR FORMING STENCILS FOR screen printing, comprising the steps of placing a film sheet consisting of a transparent backing sheet and a transparent perforated, shaded film cemented thereto on a master design to be reproduced, removing portions of the film in accordance with the design, thus exposing the backing sheet, preparing other portions of film sheets having a suitable backing to fit the exposed portions of the first sheet and placing these other portions of the film in the form of figures of the design, causing the outer surface of the film as a whole to adhere to a foraminated screen, and removing the packing. Invented by John H. Gfeller, Baltimore, Maryland. One-half assigned to F. A. Davis & Sons, Baltimore, Md. Application June 23, 1938. 6 claims.

Plate-Making:

2,240,732. LITHOGRAPHIC PLATES of improved moisture-retaining capacity, comprising predominantly aluminum with a small amount of manganese. Invented by William H. Wood, Bedford, Ohio. Assigned to The Harris-Seybold-Potter Co., Cleveland, Ohio. Application November 21, 1938. 4 claims.

2,240,773. METHOD FOR PREPARING LITHOGRAPHIC PLATES comprising applying an adhesive coating including chalk to a flat, inexpansible, rigid base, drying the coating, polishing it to a smooth hard matte ink-receiving surface, and transferring the inked drawing to a lithographic printing plate. Invented by Byron W. Hannon, Chicago, Ill. Unassigned. Original application November 15, 1937. Divisional application December 4, 1939. 1 claim.

2,241,120. PHOTO-MECHANICAL ENGRAVING APPARATUS, wherein an image in relief is formed in a metal plate and subjected to a mechanical "scanning" operation which is applied in controlling the action on the image bearing surface of a cutting tool arranged to increase the relief of the image. Invented by John Willey Dalton, London, England. Assigned to The Daily Mirror Newspapers Ltd., London, England. Application November 3, 1937. 3 claims.

2,241,568. MACHINE FOR FINISHING PHOTO-ENGRAVING CYLINDERS by abrasion, comprising an endless belt abrasive and means for moving the belt substantially transversely to a generatrix of the cylinder. Invented by Frank E. Yetter, St. Louis, Mo. Assigned to Pulitzer Publishing Company, St. Louis, Mo. Application October 21, 1937. 6 claims.

2,242,754. COMPOSITION FOR DESENSITIZING NON-PRINTING PORTIONS OF METAL LITHOGRAPHIC PLATES, comprising chrome-alum and gum arabic. Invented by William N. Misuraca, Merrick, N. Y. Unassigned. Application March 5, 1938. 2 claims.

2,242,924. APPARATUS FOR CURVING PRINTING PLATES designed to assure exact registry of the plate with the curving apparatus during the curving operation. Invented by Albert B. Schlattner, Cincinnati, Ohio. Assigned to Printing Machy. Corp., Cincinnati, Ohio. Application July 13, 1938. 9 claims.

2,242,943. STEREOTYPE CASTING BOX which, by providing within the box simple means for directing the molten metal to the proper side of the matrix and for holding the matrix back against the mating wall to prevent metal from getting in back of the matrix, eliminates the use of a pouring sheet. Invented by George M. Clark, Lynn, Mass. Unassigned. Application May 13, 1939. 5 claims.

Printing Presses and Equipment:

2,239,971. PAPER REEL CHANGING DEVICE for rotary printing machines, designed to effect pasting by causing a point of the replacement reel to be connected in register during pasting with one of the corresponding periodically recurring points of the web that is running off. Invented by Friedrich Pondorf, Plauen, Germany. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application June 24, 1937. 4 claims.

2,240,112. PRINTING MACHINE AND INK SUPPLY THEREFOR, comprising a pan arranged lengthwise of and partially receiving the printing cylinder, an ink trough arranged within the pan, mechanism for reciprocating the pan relative to the ink trough, and a pump operated by this reciprocating action to pump ink from the pan into the trough. Invented by Frank W. Egan, West Englewood, N. J., and Lynn B. Case, New Brusnwick, N. J. Assigned to John Waldron Corp., New Brunswick, N. J. Application October 10, 1939. 17 claims.

2,240,249. MULTICOLOR TEXTILE PRINTING PRESS of the type comprising a series of spaced printing couples and means for maintaining a continuous surface contact or support for the web between each printing couple, these supporting means being in the form of large transfer or carrier rollers. Invented by Arthur M. Wickwire, Jr., Mountain Lakes, N. J. Assigned to Champlain Corp., Garfield, N. J. Application July 6, 1940. 12 claims.

2,240,762. INKING APPARATUS for aniline color printing machines, characterized by having the dipping roller surface etched with an intaglio printing screen, the surface in operation being first scraped with a doctor and then contacted with an inking transfer roller which lifts the ink from the depressions of the dipping roller surface and transfers it to a plate cylinder. Invented by Paul Dietrich, Augsburg, Germany. Assigned to Maschinenfabrik Augsburg-Nurnberg A.-G., Augsburg, Germany. Application January 11, 1939. 1 claim.

2,241,172. PRINTING PRESS GRIPPER comprising a slotted member arranged transversely at the edge of the platen of the press and having a groove parallel with the slot, and a gripper plate designed to receive spaced grippers and characterized by a turned down edge which engages the groove of the slotted member, actual fastening of the gripper plate being effected by screws passing through the plate and engaging the slot in the transverse member. Invented by Elbert D. Allen, Lansing, Mich. Unassigned. Application April 22, 1940. 1 claim.

2,242,045. COMBINATION PRINTING MACHINE for either letterpress or intaglio printing, comprising a frame carrying an impression cylinder, a holder for adjustment relative to the impression cylinder, and a printing cylinder supported by the holder and arranged with a train of gears for driving purposes, means for connecting the impression cylinder to one of the gears for letterpress printing and permitting the impression cylinder to rotate freely for intaglio printing, and means for adjusting the holder to vary the operating relationship of the printing cylinder and impression cylinder to convert the machine from one type of printing to the other. Invented by Harry A. Scott, Van Wert, Ohio, and Lynn B. Case, New Brusnwick, N. J. Assigned to John Waldron Corp., New Brusnwick, N. J. Original Application October 27, 1937. Divisional application April 17, 1940. 1 claim.

2,242,182. MACHINE FOR FLOCK PRINTING TEXTILES comprising a revolving cloth carrying main cylinder, a plurality of flock applying assemblies, means for applying adhesive to the pattern rollers of these assemblies, and novel flock delivering arrangements for carrying flock to a blowing and sucking nozzle positioned at the pattern roller and for carrying unused flock from the blowing nozzle back to a flock container. Invented by Joseph A. McCann, Swansea, Mass. Assigned to Elizabeth S. McCann, administratrix. Application July 23, 1938. 10 claims.

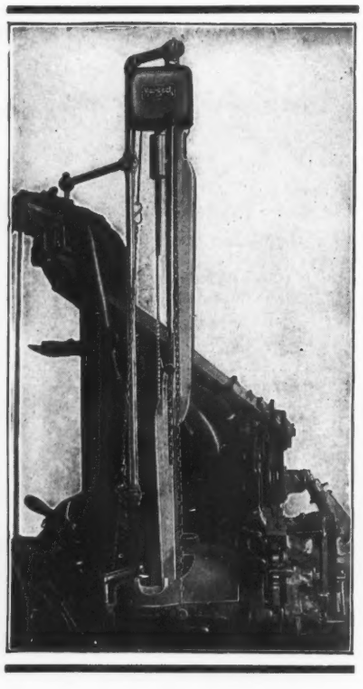
2,241,589. CONTROLLER FOR MOTOR DRIVEN PRINTING PRESSES, with special features for providing a short signal period before the press is actually started, so as to allow the workmen time to protect themselves from the machinery. Invented by Cyril P. Feldhausen, Wauwatosa, Wis. Assigned to Cutler-Hammer, Inc., Milwaukee, Wis. Application November 21, 1938. 14 claims.

2,241,671. PRINTING CYLINDER, for textile or like operations where the cylinder is employed in conjunction with an engraved roll, characterized by an adjustable crown. In one embodiment, the cylinder has a hollow flexible body and adjustable means for bending outward the part of the body intermediate its ends. Invented by Paul L. Miller, Clearwater, S. C. Assigned to United Merchants & Mfgs., Inc., New York, N. Y. Application January 29, 1941. 8 claims.

2,242,104. HAND OPERATED PRINTING PRESS, particularly for use by juveniles in gaining printing experience. The device is characterized by employing a single lever for locking up the type and for performing the impression. Invented by James F. Boyer, Kokomo, Ind. Unassigned. Application May 11, 1940. 4 claims.

2,242,214. DISTRIBUTING DEVICE FOR PRINTING MACHINES, characterized by novel means for reciprocating the ink or moisture distributing cylinders. Invented by William F. Huck, Richmond Hill, N. Y. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application June 30, 1939. 17 claims.

2,242,995. WEB DRYING APPARATUS for use in rapidly drying a printed web between successive printing operations of a multiple impression printing press. Invented by Emil Ericksson, Chicago, Ill. Assigned to Standard Process Corp., Chicago, Ill. Original application September 22, 1932. Divisional application September 5, 1936. 20 claims.



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Speaks on Color Photography

Jeffery White, of Detroit, an authority on color photography will appear at the June 17 meeting of the *Detroit Club of Printing House Craftsmen*. He will discuss Foto-Color Transparencies, Kodachromes, Dufay and numerous other types of color prints. Proofs and color prints will be shown with portable one-shot and three-shot cameras.

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R. HOE & CO., Inc. New York, N. Y.
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MORLEY BUTTON MFG. CO. Portsmouth, N. H.
NATIONAL PAPER & TYPE CO., Inc. New York, N. Y.
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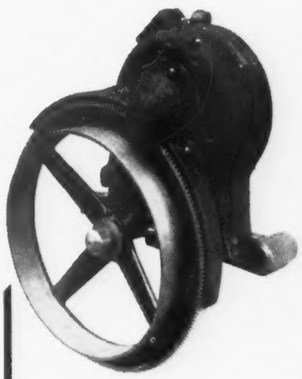

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Uses either a.c. or d.c. current.

Front bearings easily accessible for adjustment or replacement.

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Cutout for single phase motor, moving parts actuated by centrifugal force with rubber contact between contacting faces.

The Cushman offset motor is the perfect drive for Intertype, Linotype and Linograph machines. It is known everywhere for its long and economical trouble-free life. This motor, because of its three point suspension, may be attached easily on any line-casting machine. Engineered on the offset principle for accessibility and to prevent vibration.

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EQUIPMENT
SALES

Sta-Hi Installations

Sta-Hi Master Formers have recently been installed by the Columbus (Ga.) *Ledger & Enquirer*, Oakland (Calif.) *Tribune*, Boise (Idaho) *Statesman*, Lawrence (Kas.) *Kansas Color Press* and Brockton (Mass.) *Enterprise & Times*. The Harrisburg (Pa.) *Telegraph* has a Sta-Hi Autoformer with Vac-Shrink Attachment. A Rebuilt Autoformer is being installed by the Everett (Wash.) *Herald*. The Elizabeth (N.J.) *Daily Journal* has a new Junior Former. Sta-Hi Finaltrim Curved Matrix Shears have been installed by the Oakland (Calif.) *Tribune*, Harrisburg (Pa.) *Telegraph*, and Atlanta (Ga.) *Constitution*. Premier Rotary Shavers have been ordered by the Madison (Wis.) *State Journal*, Peoria (Ill.) *Star* and the St. Louis (Mo.) *Commercial Matrix, Inc.*

Wood Newspaper Sales

Sales of foundry and pressroom equipment reported by Wood Newspaper Machinery Corporation include three vacuum equipments for Automatic Autoplates to the St. Louis *Post Dispatch;* one heavy-duty Autoshaver and two vacuum equipments for Junior Autoplates to the Oklahoma City *Oklahoman;* one Wood three-ton furnace with electrical heating equipment to the Ceylon, India, *Daily News*, and a similar equipment to the Madras, India, *Hindu;* one heavy-duty Pony Autoplate and one vacuum equipment for an existing Pony Autoplate to the Bethlehem *Globe;* one vacuum equipment for an Automatic Autoplate to the Syracuse *Herald;* and two Standard Reels and Junior Autopasters, with pneumatically controlled running belt tensions, to the *Cuneo Press*, Chicago.

Recent Linotype Installations

One or more Linotypes, many of them with self-quadders and thermo-blo mold coolers, have been installed by the Washington (D.C.) *Post;* Hamilton-Smith Co., Santa Monica, Calif.; Army Field Printing Plant, Fort Bennington, Ga.; Norfolk *Ledger-Dispatch* and the *Virginian-Pilot;* Burlington (Kan.) *Republican;* MacDonald Printing Co., Tampa, Fla.; Fox Valley *Labor News*, Aurora, Ill.; Times-Journal Publishing Co., Oklahoma City; Syracuse (Kan.) *Journal;* Clay Center (Kan.) *Times;* Herald Printers and Publishers, Monterey, Calif.; Covington (Ga.) *News;* *Tribune-Chief*, Quanah, Tex., *Ozaukee Press*, Port Washington, Wis.; Dennison Manufacturing Co., Framingham, Mass.; Case, Lockwood and Brainard Company, Hartford; Lincoln (Ill.) *Evening Courier;* Rutherford Press, Inc., East Rutherford, N. J.; Cincinnati *Court Index;* Coon Rapids (Iowa) *Enterprise;* Benton Harbor (Mich.) *News-Palladium;* Salvation Army, New York, N. Y.; Philip J. Martin, Detroit; San Bruno (Calif.) *Union; The Carpenter*, Indianapolis; University of Nebraska, Lincoln; U. S. S. Wright, Pearl Harbor, Hawaii; Richland Printing Co., Mansfield, O.; Clark County *Courier*, Clark, S. D.; Mount Enterprise (Texas) *Progress;* Pottsville (Pa.) *Journal;* Walter Sanderson, Meriden, Conn.; Free Press Association, Burlington, Vt.; Butler Printing Co., Waterbury, Conn.; Sapulpa (Okla.) *Herald;* Gothic Shop, Chicago; John M. Aufrance, Alliance, O.

Handles Kromekote

Announcement has been made by the Champion Paper and Fibre Co., Hamilton, Ohio, that the Brader Smith Paper Co., Chicago, is now handling Kromekote, Champion's high finish paper stock.

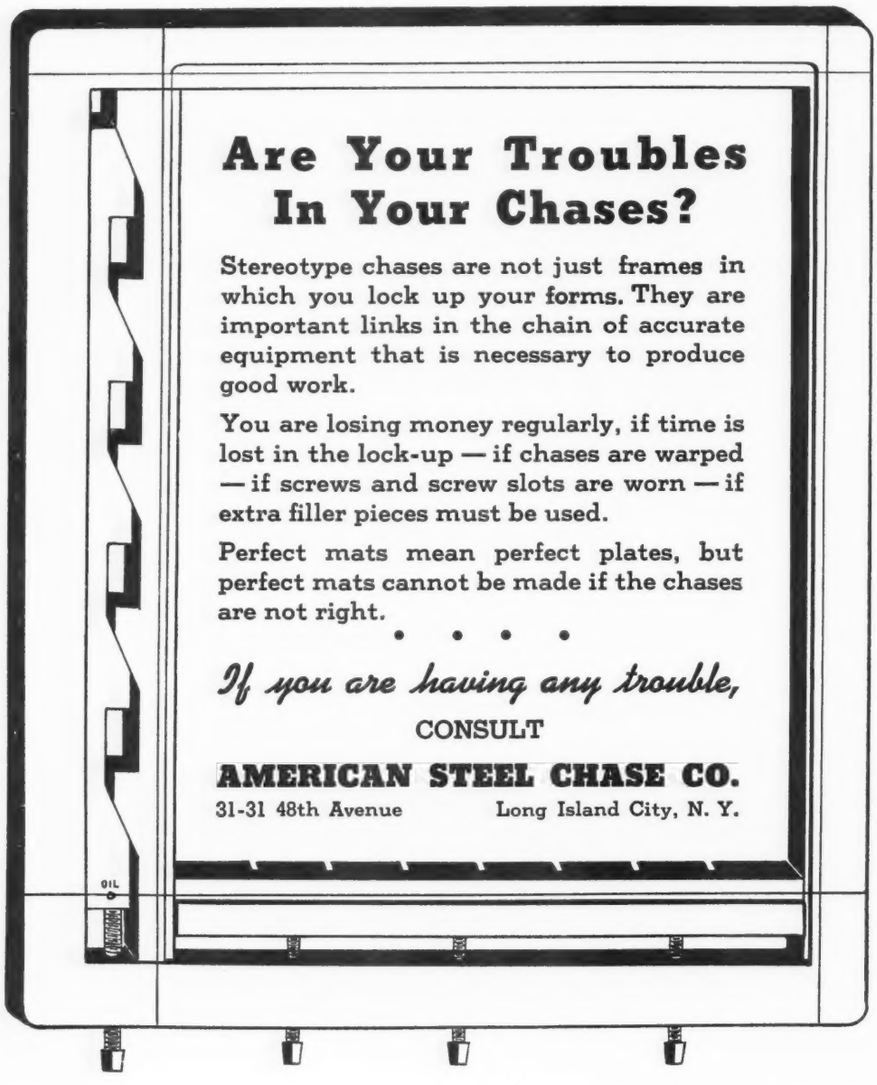
FACSIMILE

(Continued from Page 45)

forth, the receiver produces 5 ft. of newspaper copy, 2 col. wide, in an hour.

The home recording machine comes as a complete unit in a small cabinet approximately a foot square. (The cost of the machine ranges from $35 to $75, depending upon the cabinet.) It may be connected without auxiliary amplifying equipment to the output circuit of any broadcast receiver having a power rating of 5 w. or more. A switch in the voice-coil circuit can be employed to cut the speaker off during the recording of facsimile broadcasts.

The broadcasting station from which facsimile signals are sent is tuned in with a receiver as would be the case if regular sound programs were to be received. The facsimile recorder is switched on and the volume control of the receiver is turned to the point where copy has the desired contrast. The actual recording operation is wholly automatic and requires no atten-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You are losing money regularly, if time is lost in the lock-up — if chases are warped — if screws and screw slots are worn — if extra filler pieces must be used.
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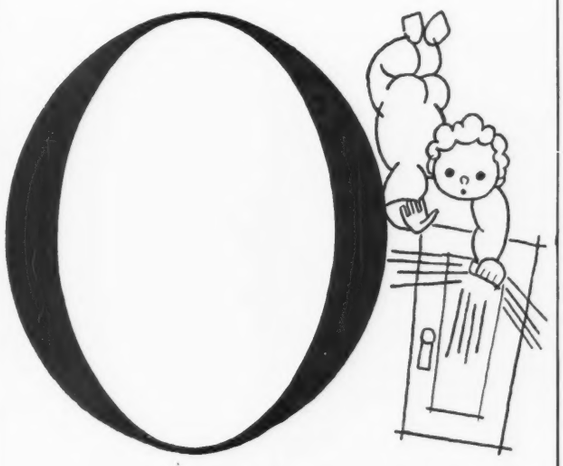

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New Molds, universal and adv. fig. style	$ 55.00	Back Knives	$ 2.00
Back Jaws	10.00	Side Knives, set	13.00
Gross Assorted Screws	1.50	Plungers	4.00
Spacebands	.75	Dis. Box Bars	4.50
Liners, solid style	1.00	Sec. El. Bars	6.40
Rubber Rolls for Keyboard	.60	Vise Locking Screws	3.00
Border Blocks	4.00	Assembler Stars	.09
Transfer Fingers, Improved	.50	Assembler Fibre Buffers	.10
		Watch Oil for Keyboard Cams	.50
		First El. Spring Pawls	.07
		Knife Wiper Flags	.05

REBUILT MATERIAL

Rebuilt Molds (uni. and adv. fig.) ($10 allowance for old)	$ 40.00	Rebuilt Margach Type Feeders	$ 55.00
Rebuilt Mold Disks ($5.00 allowance for old)	35.00	Rebuilt Back Jaws	5.50
Rebuilt Electric Pots	150.00	Rebuilt Sec. El. Bars	4.00
Rebuilt Monomelts	150.00	Rebuilt Dis. Box Bars	2.50
Rebuilt Gas Pots	90.00	Reground Back Knives	1.25
		Reground Side Knives, set	10.00

REPAIRS

Rebuilding Magazines	$25-40	Regrinding Side Knives, set	$ 2.50
Rebuilding uni. and adv. fig. molds	30.00	Rebuilding Back Jaws	4.50
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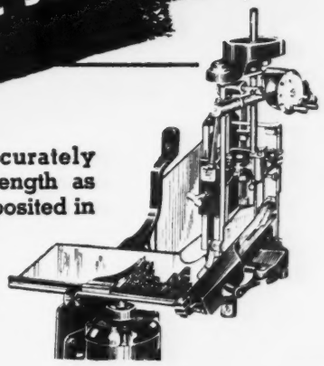

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LINOTYPES

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127 OAK ST., PLAINWELL, MICH.

tion. The simple statement that recording is automatic may seem relatively unimportant to the average reader, but it is largely the solution of the automatic recording problem that has made it possible to open the home facsimile field. Until the development of an automatic machine and inexpensive *dry* recording paper of wide latitude the adaption of facsimile recording methods to home service seemed rather remote. The home facsimile machine operates without attention throughout facsimile broadcasting periods. It holds a roll of dry recording paper which is automatically fed as long as facsimile signals are received.

An obvious question at this point might be "When will facsimile broadcasts occur and what stations will handle them?"

During the period when only experimental licenses are available and probably thereafter broadcasts will take place in the early hours between 1 a.m. and 6 a.m. when sound broadcasting facilities are idle.

Recently, Finch Telecommunications, Inc., has made available an improved type of home recording machine for broadcasters who are interested in producing complete newspapers by means of facsimile. The machine is a multistylus or triple-pen recorder which produces a newspaper five columns wide. Through the development of this machine the speed of recording has been more than doubled. It is now possible to receive 22 sq. in. or 300 6 pt. words per min. This is a rate far greater than the average eye can read and is about five times the speed of a leased teletype. Pictures, maps and signed documents may be transmitted at the same high speed. In brief, this triple-pen recorder when used through the application of frequency modulation is capable of receiving eight tabloid newspaper pages an hour, simultaneously with sound programs.

It is the opinion of Mr. Finch that newspaper publishers and editors will be the men who will adopt facsimile for the production of the home newspaper. They, he said, have been the ones responsible for the maintenance of the high standard of American news reporting.

PROBLEM

(Continued from Page 37)

ing or film on the non-work areas. It has been found that a solution testing to a pH 4 yields best results. Frequent checking of the solution is necessary to insure this. Too acid or too alkaline a solution may cause a change in the picture and bring about uneven printing. Many things may happen over the period of a run to lower or raise the reading. Tinting or bleeding of a color will be laid to the ink when in reality the cause may be traced to a radical change in the composition of the fountain dope. For aluminum plate printing, many use the zinc nitrate solution testing a Baume reading of 12, mixing this with gum solution and water to suit the final test.

Of course, incorrect ink adjustment could have the same effect as faulty fountain dope. The successful pressman uses the ink direct from the can, or with as little reduction of any kind as possible. For offset stocks No. 000 varnish, and for coated stocks No. 00000 varnish may be used. Excessive doping with such materials as kerosene, plate oil, machine oil, or splash is deplored. Emergencies may arise, when an inferior grade of paper is employed, but paper at a price often exacts quite a price in press operation.

Bargains in paper and ink are illustrated by the story of the prisoner who was sentenced to fifty lashes. He struck a bargain with the guard who was to administer the lashes, paying him for light application of the whip. All went well until the fiftieth lash, which was applied with such force as almost to cut the poor fellow in two. Upon recovery, the prisoner remonstrated. The guard replied he just wanted him to see what a bargain he got. And so it is with paper and ink bargains too. All seems well until drying, press troubles or what not creep up.

Yes, the well-printed job merits approval. It involved preparatory steps before production began. But it also required constant checking and careful watching while touring the highway of good printing to enable reaching the goal of uniformly printed sheets.

CYLINDRICAL ENGRAVING

(Continued from Page 2)

plate is placed on a "reformer" or device used in electrotyping, similar to that designed by L. W. Claybourn.

Etching of the curved copper plate has been performed by electrolysis (Holland); 16-gage copper has been used, also plates 0.030 in. thick, the latter backed with stereotype metal before etching.

It should be pointed out that the cylindrical engraving process is not intended for everyday newspaper use: its special field (as with similar methods) is for supplement and special editions, where quality of impression is of paramount importance. In this direction, the process of Lee and Funk holds definite promise, among other things permitting sharp halftone rendition and the use of delicate type faces, either in the editorial columns or in the advertising sections.

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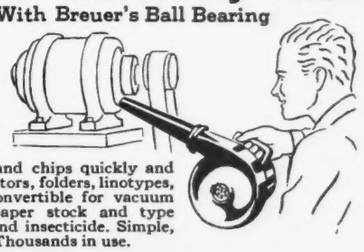

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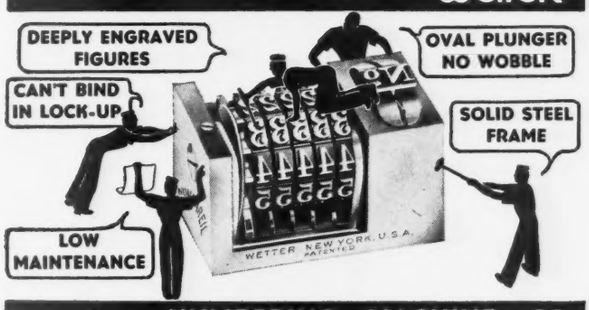

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1 COMPOSING MACHINE — Return the post card for literature describing the features of the Blue Streak Linotypes. As advertised in this issue, page 74-75.

2 SAW SHARPENING — Send for information from Automatic Saw Sharpening Co. on how to get new saw blades free.

3 COMPOSING MACHINE — Send for catalog on the features of the Linograph "50". As advertised in this issue, page 14.

4 SAW TRIMMER — Send for 8 page booklet explaining features of C & G No. 3A Saw Trimmer. As advertised in this issue, page 73.

5 BAND SAW — Get complete data on the new Economy Rouse Band Saw. As advertised in this issue, page 33.

6 COMPOSING MACHINE SAW —Circle this number for the booklet, "Short Cuts With Odd Measures." As advertised in this issue, page 101.

7 STORAGE RACK — Return post card for details on the Reid Newspaper Storage Rack.

8 CUT CEMENT — Let Booth Rubber Co. tell you how useful Zink Cut Cement can be to you. As advertised in this issue, page 71.

9 SAW — Send for literature describing the Hammond saws and routers. As advertised in this issue, page 59.

10 TYPE METAL — Send for the informative Imperial booklet about type metal problems. As advertised in this issue, page 24.

11 MATRIX CONTRAST — "prevents errors by lessening eyestrain." Send for booklet. As advertised in this issue, page 34.

12 COMPOSING MACHINE — Circle this number for complete details of the Monotype "3 Way System." As advertised in this issue, page 55.

13 TYPE CABINET — Circle this number for information on Hamilton Form Lifts. As advertised in this issue, page 89.

14 MOLD COOLER — Linotype Parts Company will send you information on their electric air mold cooler. As advertised in this issue, page 89.

15 PROOF PRESSES — Return the post card for information on the newest Vandercook Electric Proof Presses No. 22 and 23. As advertised in this issue, inside back cover.

16 NUMBERING MACHINES — Wetter offers you an unique booklet, "Numbering For Profit."

17 LINE CASTER — Circle this number for the Intertype catalog. As advertised in this issue, outside back cover.

18 METAL FEEDER — Get information on the advantages and features of the Jordan Metal Feeder. As advertised in this issue, page 93.

19 STRIP MATERIAL MACHINE —Circle this number for information on Elrod. As advertised in this issue, page 3.

20 TELETYPESETTER — Send for booklet about composition with Teletypesetter. As advertised in this issue, page 91.

21 METAL FEEDER — Circle this number for more information on the Margach Metal Feeder. As advertised in this issue, page 98.

22 REPLACEMENT PARTS — Return the reply card for Montgomery & Bacon's catalog of parts for linecasting machines. As advertised in this issue, page 101.

23 METAL POT PILOT — Get full information on Auto-Pilot gas control. As advertised in this issue, page 87.

24 MATRIX CLEANING PROCESS — Send the post card for complete information on the Delgass process. As advertised in this issue, page 20-21.

25 LINECASTING MACHINE SAW — Get full details on the operation of the Curle Slug Corrector. As advertised in this issue, page 96.

26 LINECASTING MACHINE MOTOR — Return the post card for details on the Cushman Offset Motor. As advertised in this issue, page 99.

27 TYPE METAL — Circle this number. E. W. Blatchford Co. will send you information on type metals and platemaking metals. As advertised in this issue, page 62-63.

28 CHASES — American Steel Chase Co. asks, "tell us your stereo chase problem." As advertised in this issue, page 100.

29 REBUILT EQUIPMENT — M. L. Abrams Co. will send you information about rebuilt machinery. As advertised in this issue, page 99.

Pressroom

30 PRESS—Kluge will send details of "the press with perfect Control."

31 PAPER — Champion offers information on "paper for every use." As advertised in this issue, page 53.

NOTE

If you do not find the equipment or supplies in which you are interested on this post card insert look it up in your PRINTING EQUIPMENT Engineers "Where To Buy" Catalog of Printing Equipment and Supplies.

32 **OFFSET**—Get information on offset and specifications of Harris LSB 17x22 Single Color. As advertised in this issue, page 15.

33 **INK**—Ask for literature on Sinclair & Valentine Zephyr Blacks. As advertised in this issue, page 96.

34 **PRESS**—Get complete details on this "Revolutionary new Miehle press."

35 **PRESS BLANKETS** — Tingue, Brown & Co. will send you specifications on Tingue blankets for every use. As advertised in this issue, page 28

36 **PRESSES** — Miller Printing Machinery Co. welcomes the opportunity to help you to greater production in your pressroom.

37 **NEWSPAPER PRESS** — Get details of Goss AntiFriction Presses for magazine and newspaper production. As advertised in this issue, page 25.

38 **PRESS BLANKETS** — Circle this number for recommendations on the Vulcan blanket for your use. As advertised in this issue, page 57.

39 **TWO COLOR ROTARY**—Send post card for details on applications and specifications of the Cottrell Claybourn Rotary. As advertised in this issue, page 51.

40 **INK** — Eagle Printing Ink Co. offers informative material on color. Send for it. As advertised in this issue, page 87.

41 **17x22 PRESS**—Get full details on the "Kelly features for every printer." As advertised in this issue, page 67.

42 **INK** — F & L offers information on "laboratory proven" printing inks.

43 **PAPER** — Bryant Paper Co. will send you samples of Bryant Papers for all purposes.

44 **INK** — Use the post card to get the Flint Color Selector. As advertised in this issue, page 17.

45 **AUTOPASTER** — Get the facts on "how the Wood Autopaster improves the quality of newspaper printing and reduces waste." As advertised in this issue, page 29.

46 **INK** — Investigate Velo Cold Set Inks. Circle this number and return the post card. As advertised in this issue, page 61.

47 **FOLDERS** — Dexter will give you latest specifications of the four models of the Cleveland Folder.

48 **NEWSPAPER PRESS** — R. Hoe & Co. will send details of Hoe anti-friction bearing rotary presses. As advertised in this issue, page 13.

49 **PAPER** — Get your copy of the International demonstration folder. As advertised in this issue, page 81.

50 **ROLLERS** — Get more information on Mercury Rollers or Press Blankets. As advertised in this issue, page 79.

51 **INK** — Send for IPI's handy Color Guide. Circle this number, you will receive your copy. As advertised in this issue, page 69.

52 **ROLLERS** — Ideal Roller Co. offers to send you information on the Ideal Roller for your presses. As advertised in this issue, page 27.

53 **CUTTER** — Circle this number and return post card for specifications on the C&P 26½" Craftsman Lever Cutter.

54 **CUTTER KNIVES** — To get details of Coes Micro-Ground Knives, send the post card.

55 **NEWSPAPER PRESS** — For complete specifications on Tubular Vacuum Casting Boxes, send the post card. As advertised in this issue, page 22.

56 **INK** — Geo. H. Morrill Co. asks, "May we show you our colors?" Return the post card. As advertised in this issue, page 95.

57 **ROLLERS** — Get details and advantages of synthetic rubber rollers from Dayton Rubber Mfg. Co. As advertised in this issue, page 23.

58 **ROLLER CLEANING MACHINE** — Return the post card for information on the Hi-speed roller cleaner. As advertised in this issue, page 83.

59 **PRESS BLANKETS** — Get the details on the New England line on newspaper press blankets. As advertised in this issue, page 16.

60 **NEWS INKS** — Get information from Geo. H. Morrill Co. on planned color selection. As advertised in this issue, page 7.

61 **PRESS ROLLERS** — Wild & Stevens Inc. will send you data on its complete line of rollers. As advertised in this issue, page 83.

62 **INK** — Return the post card for information on Johnson Inks. As advertised in this issue, page 32.

63 **GRAVURE INK** — Fred'k H. Levey Co., Inc. offers information on "New Type A Gravure Ink and its use." As advertised in this issue, page 64A-64B.

PLEASE FILL OUT THIS CARD CAREFULLY

PRINTING EQUIPMENT Engineer — June
1276 West Third Street, Cleveland, Ohio.

Without obligation please have the manufacturers send me literature or information circled below. (These numbers correspond to numbers of descriptive paragraphs).

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80	81	82	83	84	85	86	87			

NAME ..... TITLE ..... DEPT. .....

FIRM NAME .....

STREET ..... CITY ..... STATE .....

NOTE: I am especially interested in (give details)

.....

64 **PRESS PACKING** — Return the post card for more data on Goodyear packing. As advertised in this issue, page 4.

65 **PRESS DRIVES PASTERS** — Cline Electric Mfg. Co. will send you information. As advertised in this issue, page 8-9.

66 **PRESS FILTER LIGHT** — ATF offers complete details on the new ATF Filt-Air-Lite. As advertised in this issue, page 92.

67 **ROLLERS** — Return the post-card for information on Godfrey rollers. As advertised in this issue, page 96.

68 **PAPER CUTTERS** — Circle this number for full data on Challenge paper cutters. As advertised in this issue, page 19.

69 **INK** — Herrick Ink Co. offers information on news ink and color. As advertised in this issue, page 11.

Platemaking

70 **DRY MATS** — Certified offers an informative booklet on plate duplication with Dry Mats. As advertised in this issue, page 26.

71 **STEREO SUPPLIES** — Get the Eastern Newspaper Supply Catalog. Return the post card. As advertised in this issue, page 31.

72 **ROTARY SHAVER** — Circle this number for complete details of the Barker Rotary Shaver. As advertised in this issue, page 94.

73 **STEREOTYPE SUPPLIES** — Return the post card for information about Coyne & Paddock products for Stereotypers. As advertised in this issue, page 99.

74 **PLATE SHAVER** — Get information on the features of the Ostrander-Seymour Rotary Head Plate Shaver. As advertised in this issue, page 12.

75 **ENGRAVER'S SUPPLIES** — Harold M. Pitman Co. offers information on new processes for making newspaper halftones. As advertised in this issue, page 96.

76 **ZINC** — Send the post card for complete data on Edes products for photo-engraving. As advertised in this issue, page 85.

77 **DRY MAT** — Circle this number for a sample of Wood Dry Mats. As advertised in this issue, page 91.

78 **CATALOG** — American Publishers Supply offers a complete catalog of stereotype supplies. As advertised in this issue, page 88.

79 **DRY MAT** — Circle this number for test samples of Morley Trutone Mats.

80 **ZINC** — Atlantic Zinc Works will send you the booklet, "Getting Down To Zinc Facts." As advertised in this issue, page 97.

81 **MASTERFORMER** — Sta-Hi Corp. offers a booklet on the uses and features of Master Formers. As advertised in this issue, page 1.

82 **ROUTING CUTTERS** — Get the John Royle catalog 425 of Routing Cutters. As advertised in this issue, page 95.

Miscellaneous

83 **BEARINGS** — Return the post card for information on Timken Tapered Roller Bearings. As advertised in this issue, inside front cover.

84 **ELECTRIC TOOL** — Get descriptive folder about the Whiz Electric Tool. As advertised in this issue, page 101.

85 **BEARINGS** — Get information from SKF on bearings for your requirements. As advertised in this issue, page 18.

86 **MOTORS** — Kimble Electric Co. offers a booklet on motors for the printing industry. As advertised in this issue, page 101.

87 **BEARINGS** — Norma-Hoffmann Bearings Corp. asks you to get its catalog of bearings for the printing industry. As advertised in this issue, page 30.

***LITHOGRAPHER'S MANUAL — Compiled by Walter E. Soderstrom.** Second revised edition. Technical information from copy to finished job. Nationally known technical men contributed the bulk of practical camera, platemaking and presswork information. Size 8⅛ in. by 11¼ in. Bound in red cloth, gold stamped. Many of the 368 pages are illustrated. Price $5 per copy, cash with order.

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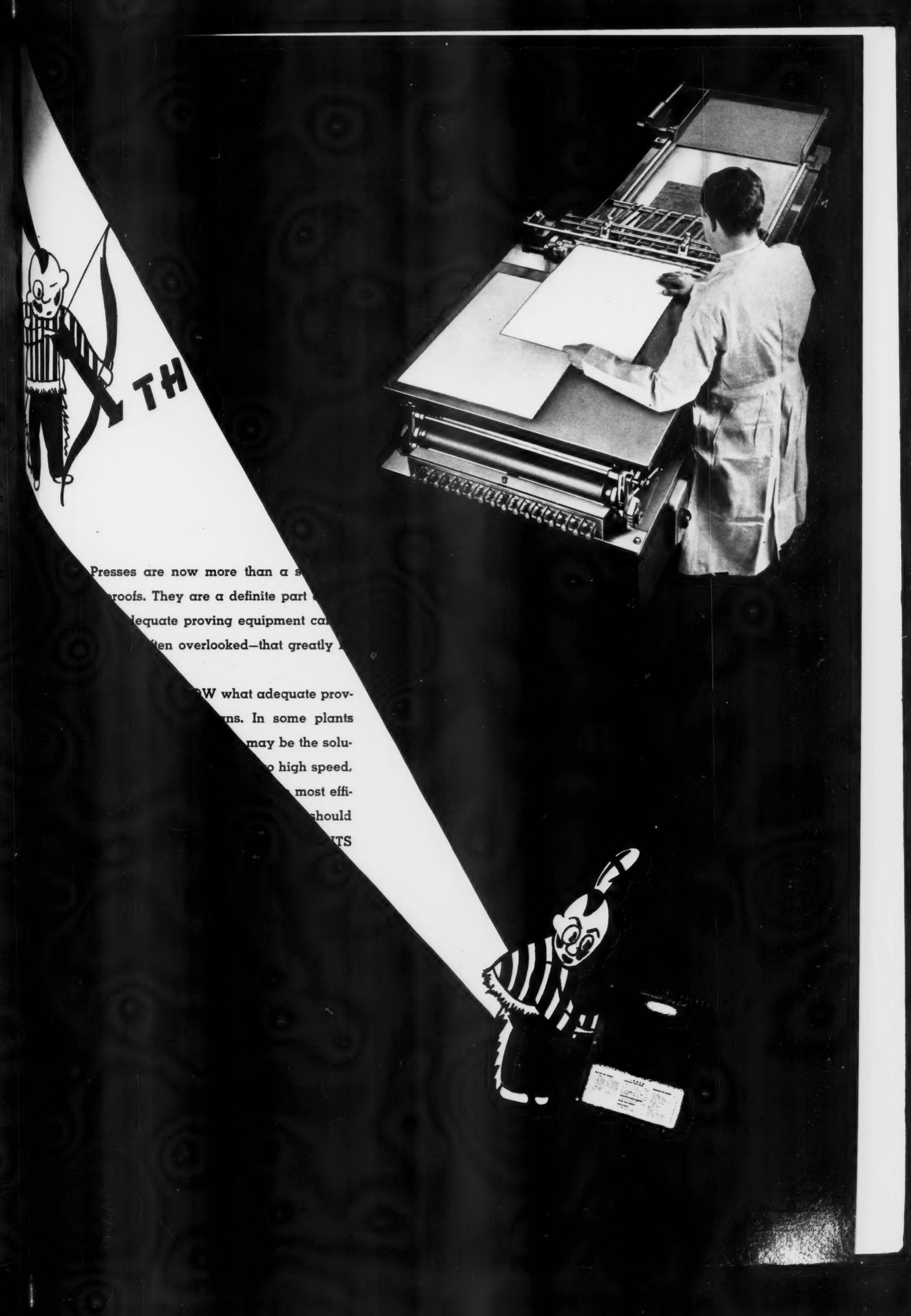
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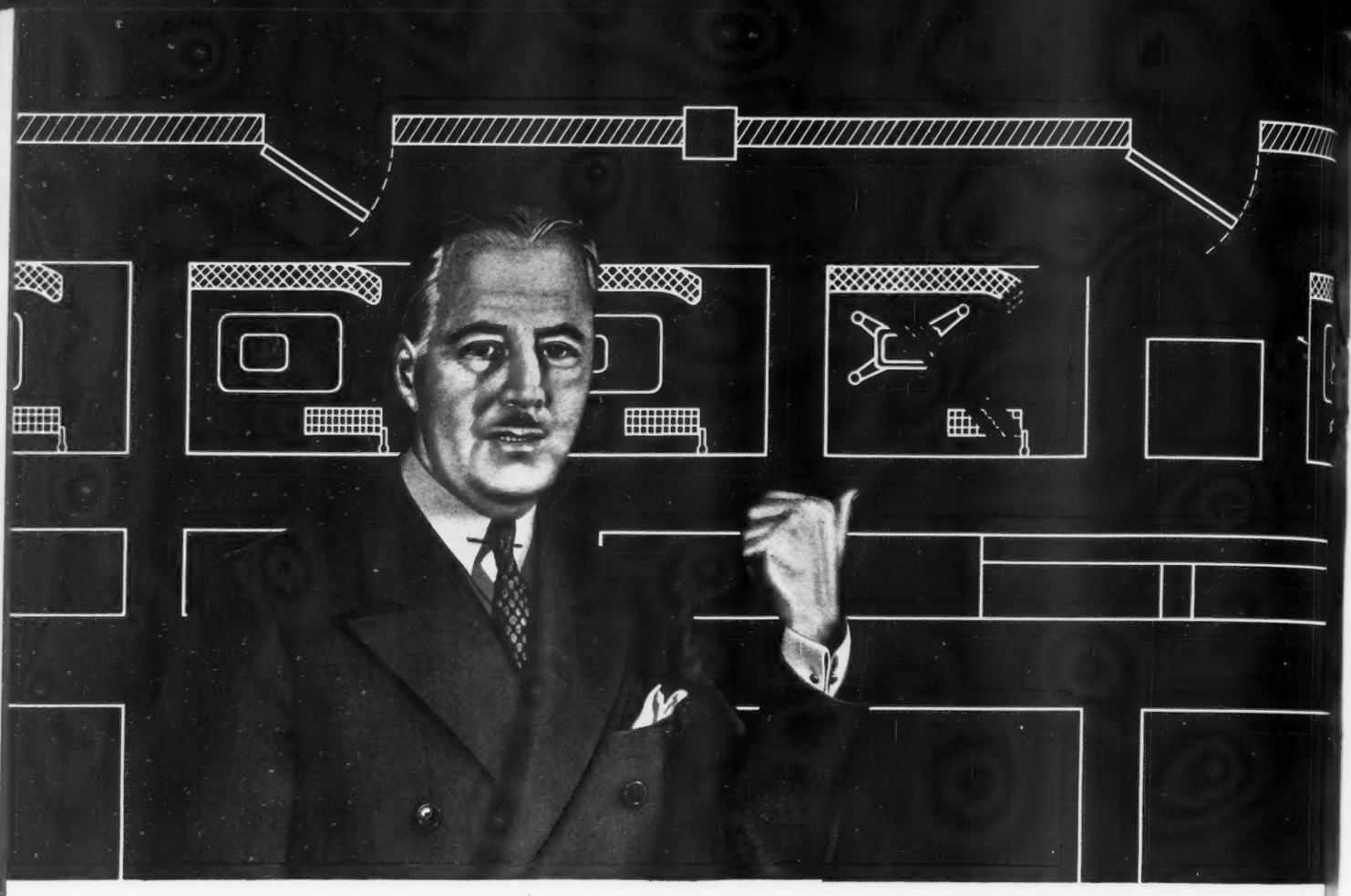

X marks the spot where profits are being lost

IN MANY COMPOSING ROOMS, profits are lost through the use of over-age line composing machines. Here are some of the reasons why such machines are costly to operate . . . *and why it pays to install a modern Intertype:*

Labor. Whether your machine is new and efficient, or old and obsolete, you pay the same scale.

Down Time. An old machine naturally needs more attention than a new one . . . and of course down time always occurs just when you are busiest.

Repairs. The cost of replacement parts and repairs may not be a major item like labor, but it does count up as time goes on.

New Features. Such modern developments as automatic quadding and centering, electrically operated NO-TURN magazine shift, six-pocket mold disk, and the Mohr Intertype saw—just to mention a few—may make all the difference between large profits and merely breaking even on your type composition.

Flexibility. A new Intertype can be equipped for a much wider range of type faces . . . quicker changes from one magazine to another . . . less "swinging" of magazines.

Better Slugs. Modern Intertypes have the new baffle mouthpiece, duplex mold-cooling blower, and improved thermostatic control of crucible and mouthpiece temperatures.

New Type Faces. Nothing brightens up your business like a few new faces of type . . . whether you are a trade compositor, a commercial printer, or a big daily or small weekly newspaper.

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